

DAEWOO
DAEWOO ELECTRONICS CO., LTD.
686, AHYEON-DONG MAPO-GU SEOUL, KOREA
C.P.O. BOX 8003 SEOUL, KOREA
TELEX: DWELEC K28177-8
CABLE: "DAEWOEELEC"
FAX: 02) 590-6291
TEL: 02) 360-7114/590-6151~5
<http://www.dwe.daewoo.co.kr>

S/M NO. : R971M0A001

PRINTED DATE: JULY 1998

DAEWOO

Service Manual

Microwave Oven

Model: KOR-971M0A

KOR-971Q0A



DAEWOO ELECTRONICS CO., LTD.

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

- (a) Do not operate or allow the oven to be operated with the door open.
- (b) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary: (1) Interlock operation, (2) proper door closing, (3) seal and sealing surfaces (arcing, wear, and other damage), (4) damage to or loosening of hinges and latches, (5) evidence of dropping or abuse.
- (c) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, wave guide or transmission line, and cavity for proper alignment, integrity, and connections.
- (d) Any defective or misadjusted components in the interlock, monitor, door seal and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.
- (e) A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

TABLE OF CONTENTS

PROPER USE AND SERVICE PRECAUTIONS	2
SPECIFICATIONS	3
NAMES AND FUNCTION OF PARTS	4
CONTROL PANEL	5
EARTHING INSTRUCTIONS	7
OPERATION PROCEDURE	8
HOW TO SET THE OVEN CONTROLS	9
INTERLOCK MECHANISM FUNCTIONS AND ADJUSTMENTS	34
PRECAUTIONS FOR DISASSEMBLY AND REPAIR	36
DISASSEMBLY AND ASSEMBLY	37
TROUBLE SHOOTING GUIDE	44
MEASUREMENT	52
COMPONENT TEST PROCEDURE	54
WIRING DIAGRAM	55
EXPLODED VIEWS AND PARTS LIST	56
PRINTED CIRCUIT BOARD	58
P.C.B CIRCUIT DIAGRAM	62

PROPER USE AND SERVICE PRECAUTIONS

1. For Safe Operation

Damage that allows the microwave energy (that cooks or heats the food) to escape will result in poor cooking and may cause serious bodily injury to the operator.

IF ANY OF THE FOLLOWING CONDITIONS EXIST, OPERATOR MUST NOT USE THE APPLIANCE.

(Only a trained service personnel should make repairs.)

- 1) A broken door hinge.
- 2) A broken door viewing screen.
- 3) A broken front panel, oven cavity.
- 4) A loosened door lock.
- 5) A broken door lock.

The door gasket plate and oven cavity surface should be kept clean.

No grease, soil or spatter should be allowed to build up on these surfaces or inside the oven.

DO NOT ATTEMPT TO OPERATE THIS APPLIANCE WITH THE DOOR OPEN. The microwave oven has concealed switches to make sure the power is turned off when the door is opened. Do not attempt to defeat them.

DO NOT ATTEMPT TO SERVICE THIS APPLIANCE UNTIL YOU HAVE READ THIS SERVICE MANUAL.

2. For Safe Service Procedures.

- 1) This microwave oven weight 18kg (40 lbs.) and must be placed on a horizontal base strong enough to support this weight.
- 2) The oven should be placed as far from high temperature source and vapour as possible.
- 3) The power supply cord is about 1.4m (4.8ft) long. Earthing is required when connecting the power source.
- 4) Maximum power consumption of this oven is approximately 1.25Kw. It is suggested that the unit is operated on such power line (about 10 amperes) that can provide more power than this rating.
- 5) Object must not be placed on the top enclosure so as not to obstruct air flow for ventilation.

WARNING : This appliance must be earthed.

IMPORTANT

The wires in this mains lead coloured in accordance with the following code.

Green-and-yellow	: Earth
Blue	: Neutral
Brown	: Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked with the letter 'E' or by earth symbol or green-and-yellow.

The wire which is coloured blue must be connected to the terminal which is marked with the letter 'N' or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter 'L' or coloured red.

NOTE : This oven is designed for counter-top use only.

SPECIFICATIONS

POWER SUPPLY		120V ~ , 60Hz
MICROWAVE	POWER CONSUMPTION	1,250 W
	OUTPUT POWER	950 W (IEC 705)
	FREQUENCY	2,450 MHz
OUTSIDE DIMENSIONS (W X H X D)		526 (20.7) X 345 (13.6) X 382 (15) mm (inch)
CAVITY DIMENSIONS (W X H X D)		335 (13.2) X 254 (10) X 358 (14.1) mm (inch)
NET WEIGHT		Approx. 18 kg (40 lbs.)
TIMER		99 min 99 sec.
SELECT FUNCTION		Microwave / Auto defrost / Auto cook
MICROWAVE POWER LEVEL		10 stages

* Specifications are subject to change without notice.

EXTERNAL VIEWS

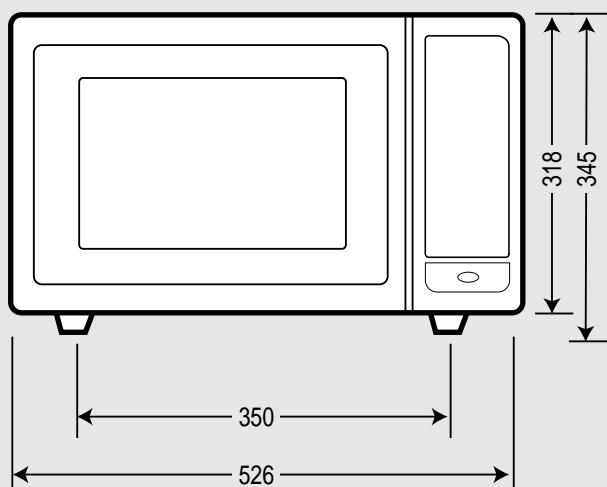


Fig. 1 Front View

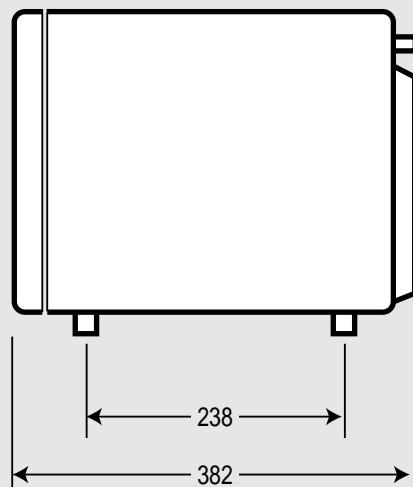
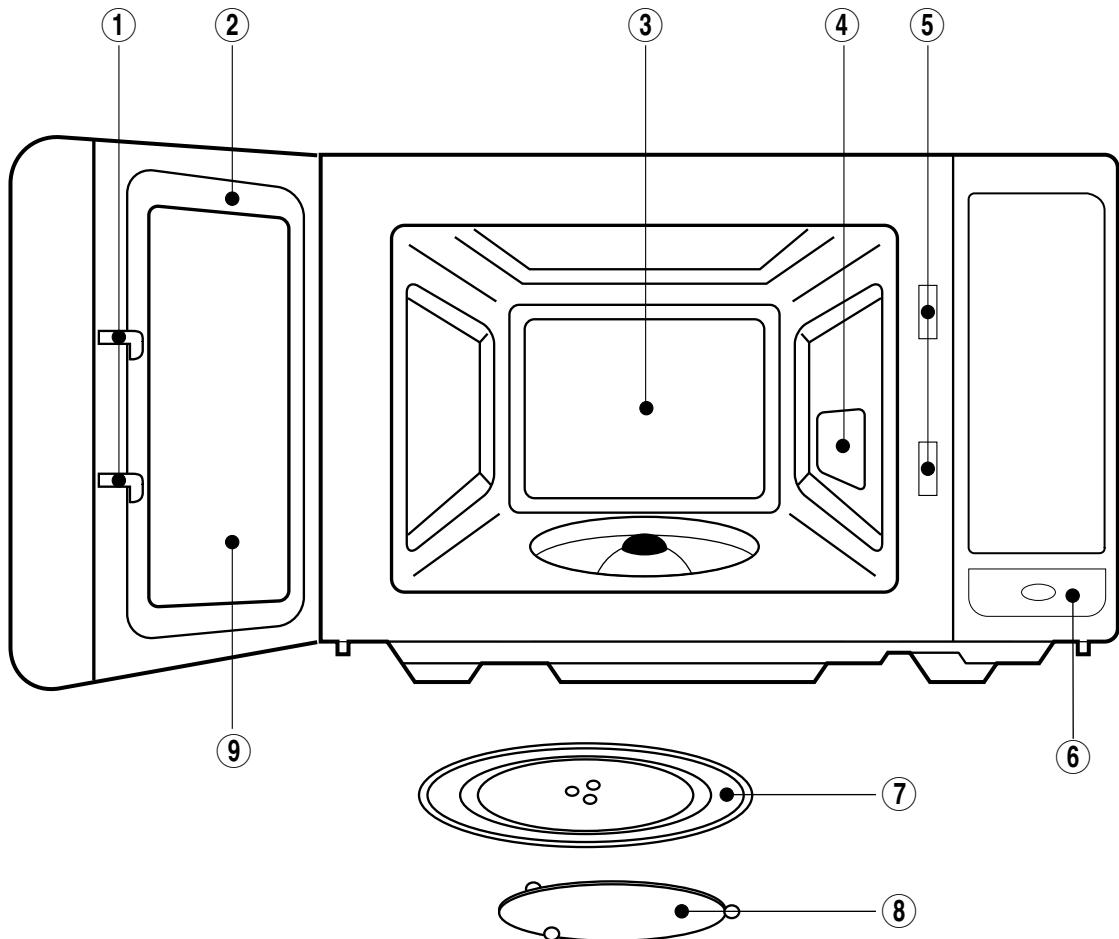


Fig. 2 Side View

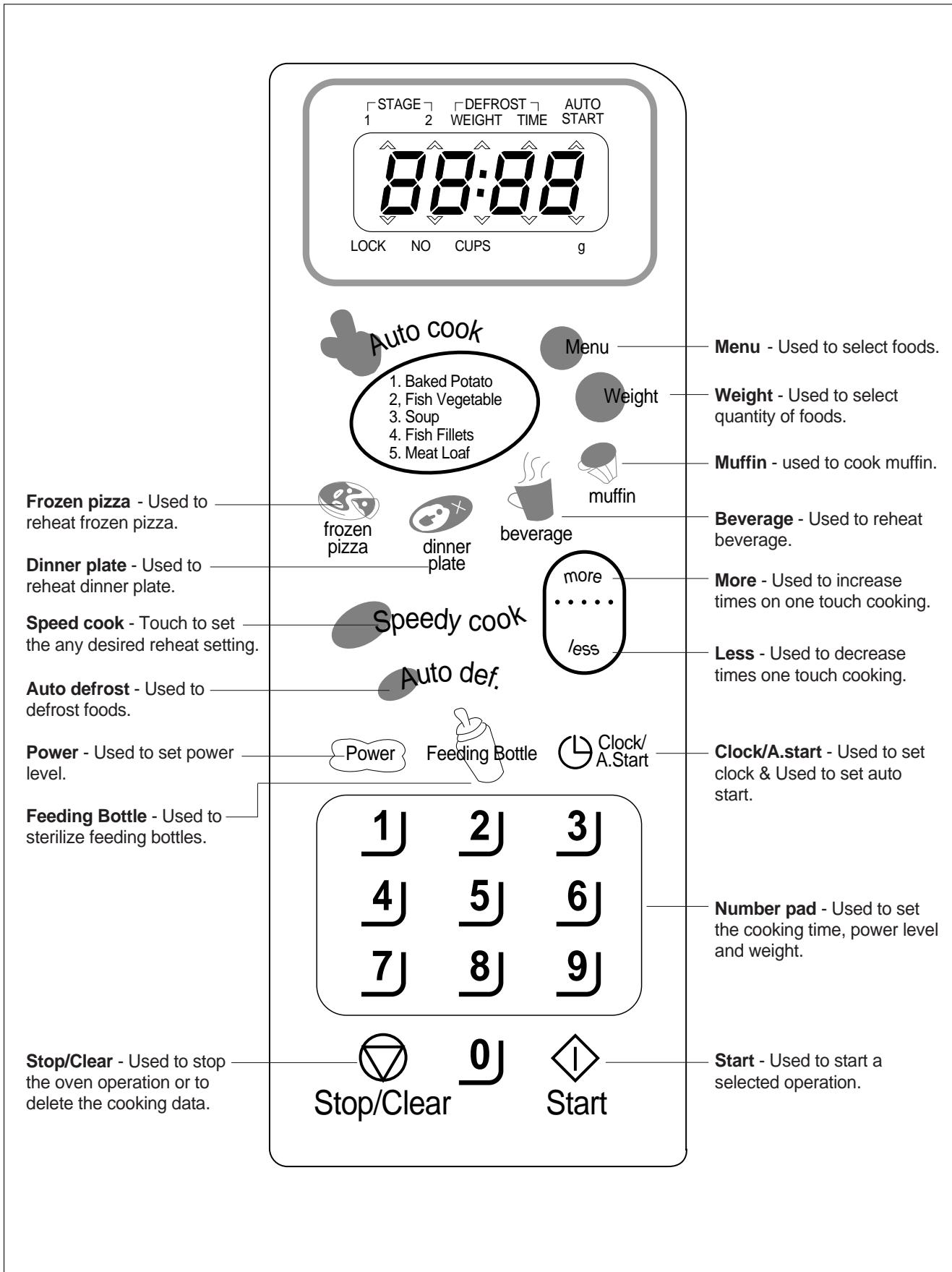
NAMES AND FUNCTION OF PARTS



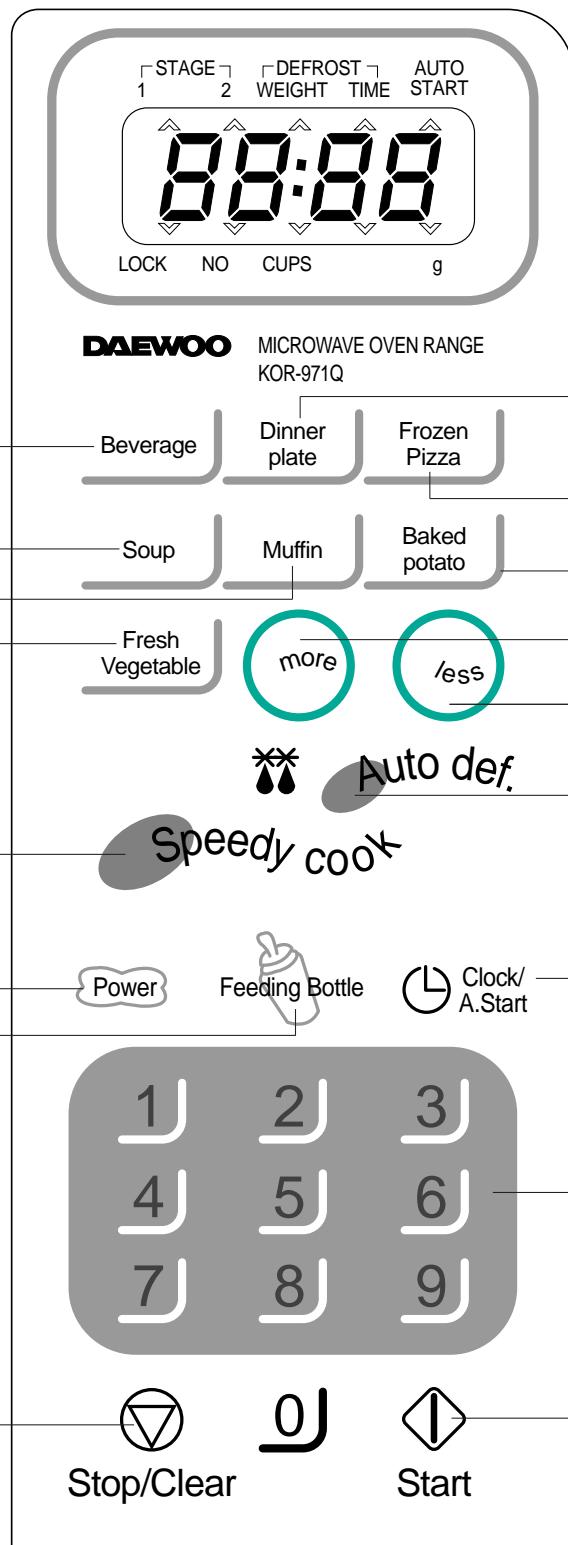
- **Door latch** ; When the door is closed it will automatically lock shut. If the door is opened while the oven is operating. The magnetron will automatically shut off.
- **Door seal** ; The door seal maintains the microwave within the oven cavity and prevents microwave leakage.
- **Oven cavity**
- **Spatter shield** ; Protects the microwave outlet from splashes of cooking foods.
- **Safety interlock system** ; Prevents the oven from operating while the door is opened.
- **Door release button** ; Pushing this button stops oven operation and opens the door.
- **Glass cooking tray** ; Made of special heat resistant glass. The tray must always be in proper position before operating. Do not cook food directly on the tray.
- **Roller guide** ; Supports the glass cooking tray.
- **Door screen** ; Allows viewing of food. The screen is designed so that light can pass through, but not the microwaves.

CONTROL PANEL

KOR-971M0A



KOR-971Q0A



EARTHING INSTRUCTIONS

This appliance must be earthed. In the event of an electrical short circuit, earthing reduces the risk of electric shock by providing an escape, wire for the electric current. This appliance is equipped with a cord having a earthing wire with a earthing plug. The plug must be plugged into an outlet that is properly installed and earthed.

WARNING : Improper use of the earthing plug can result in a risk of electric shock. Consult a qualified electrician or serviceman if the earthing instructions are not completely understood, or if doubt exists as to whether the appliance is properly earthed. If it necessary to use an extension cord, use only a 3-wire extension cord that has a 3-blade earthing plug, and a 3-slot receptacle that will accept the plug on the appliance. The marked rating of the extension cord should be equal to or greater than the electrical rating of the appliance.

INSTALLATION

1. Steady, flat location

This oven should be set on a steady, flat surface.

This oven is designed for counter top use only.

2. Leave space behind and side

All air vents should be kept a clearance. If all vents are covered during operation, the oven may overheat and, eventually, oven failure.

3. Away from Radio and TV sets

Poor television reception and radio interference may result if the oven is located close to a TV, Radio, or antenna, feeder and so on.

Position the oven as far from them as possible.

4. Away from heating appliances and water taps

Keep the oven away from hot air, steam or splash when choosing a place to position it, or the insulation might be adversely affected and breakdowns occur.

5. Power supply

- Check your local power source. This oven requires a current of approximately 10 amperes, 120V 60Hz.
- Power supply cord is about 1.0 meters long.
- The voltage used must be the same as specified on this Microwave Oven. Using a higher voltage may result in a tire or other accident causing oven damage. Using low voltage will cause slow cooking. We are not responsible for damage resulting from use of this oven with a voltage of ampere fuse other than those specified.
- This appliance is supplied with cable of special type, which, if damaged, must be repaired with cable of same type. Such a cable can be purchased from DAEWOO and must be installed by a Qualified Person.

6. Examine the oven after unpacking for any damage such as:

A misaligned door, Broken door, A dent in cavity.

If any of the above are visible, DO NOT INSTALL, and notify dealer imediately.

7. Do not operate the oven if it is colder than room temperature.

(This may occur during delivery in cold weather.) Allow the oven to become room temperature before operating.

OPERATION PROCEDURE

This section includes useful information about oven operation.

1. Plug power supply cord into a standard 120V AC 60Hz power outlet socket.
2. After placing the food in a suitable container, open the oven door and put it on the glass tray. The glass tray must always be in place during cooking.
3. Shut the door. Make sure that it is firmly closed.

1 When the oven door is opened, the light turns off.

2 The oven door can be opened at any time during operation by pressing the door release button on the control panel. The oven will automatically shut off. To restart the oven, close the door and then touch START.

3 Each time a pad is touched, a BEEP will sound to acknowledge the touch.

4 The oven automatically cook on full power unless set to a lower power level.

5 The display will show “:0” when the oven is plugged in.

6 Time clock returns to the present time when the cooking time ends.

7 When the STOP/CLEAR pad is touched during the oven operation, the oven stops cooking and all information retained. To erase all information (except the present time), touch the STOP/CLEAR pad once more. If the oven door is opened during the oven operation, all information is retained.

8 If the START pad is touched and the oven does not operate, check the area between the door and door seal for obstructions and make sure the door is closed securely. The oven will not start cooking until the door is completely closed or the program has been reset.

Make sure the oven is properly installed and plugged into the electrical outlet

Wattage output chart

- The power-level is set by touching the POWER pad. The chart shows the display, the power level and the percentage of power.

Touch Power Pad, Once the Touch	Power Level (Display)	Approximate Percentage of Power
POWER	P-HI	100 %
9	P-90	90 %
8	P-80	80 %
7	P-70	70 %
6	P-60	60 %
5	P-50	50 %
4	P-40	40 %
3	P-30	30 %
2	P-20	20 %
1	P-10	10 %
0	P- 0	0 %

HOW TO SET THE OVEN CONTROL(KOR-971M0A)

SETTING THE CLOCK

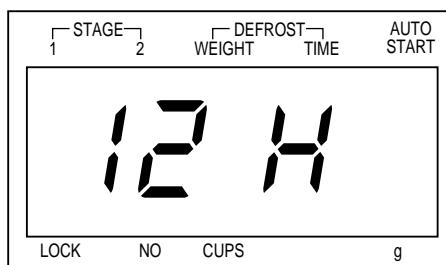
When the oven is first plugged in, the display will flash “:0” and a tone will sound. If the AC power ever goes off, the display will flash “:0” when the power comes back on.

DO THIS...

**CLOCK /
A. START**

1. Touch **CLOCK/A.START** pad.

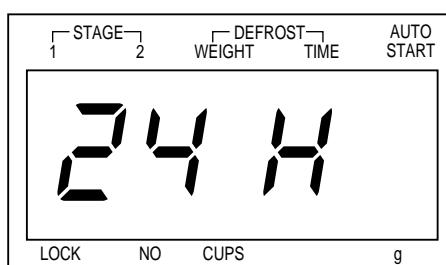
THIS HAPPENS...



This is a 12 hour clock system.

**CLOCK /
A. START**

2. Touch **CLOCK/A.START** pad once more.



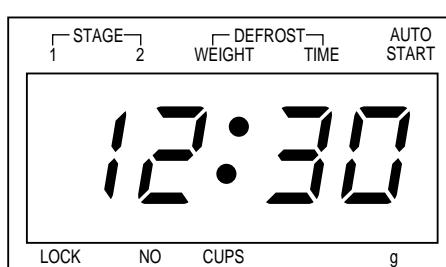
This is a 24 hour clock system.

NOTE :

This oven is multiple clock system. If you want 12 hour clock system, can be omitted this step.

1 2 3 0

3. Enter the correct time of day by touching the numbers in sequence.



The display will then begin blinking.

**CLOCK /
A. START**

4. Touch **CLOCK/A.START** pad.

The display stop blinking, and the colon starts blinking.

If you selected 12 hour clock system, this digital clock allows you to set from 1:00 to 12:59.

If you selected 24 hour clock system, this digital clock allows you to set from 0:00 to 23:59.

NOTE : If you attempt to enter an incorrect time, the time will not be set and a error signal tone will sound. Touch the **CLOCK/A.START** pad re-enter the time.

WEIGHT DEFROSTING

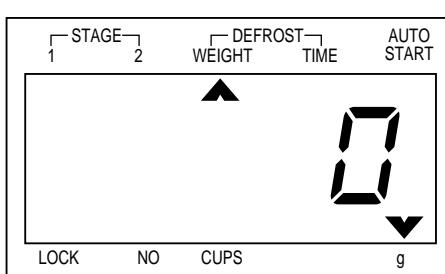
WEIGHT DEFROST lets you easily defrost food by eliminating guesswork in determining defrosting time. The minimum weight for WEIGHT DEFROST is 200g. The maximum weight for WEIGHT DEFROST is 3000g. Follow the steps below for easy defrosting.

DO THIS...

AUTO
DEFROST

1. Touch AUTO DEFROST pad.

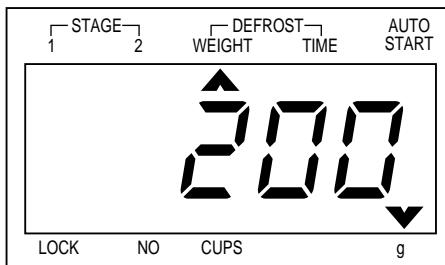
THIS HAPPENS...



The WEIGHT DEFROST indicator lights and "0" is displayed. And the "lb" indicator starts blinking.

2 0 0

2. Touch number pads for the defrosting weight you want.



The display will show the numbers you pressed in the order you touched.

START

3. Touch START pad.

WEIGHT DEFROSTING begins. The defrosting time is automatically determined by the food category and weight entered.

The g indicator goes off and the WEIGHT DEFROST indicator blinks and the defrosting time counts down in the display window. The oven beeps during the defrosting cycle to signal that the food needs to be turned or rearranged. When the defrosting time ends, you will hear 3 beeps.

NOTE : To prevent overdefrosting, thin areas or edges can be shielded with strips of aluminum foil.

TIME DEFROSTING

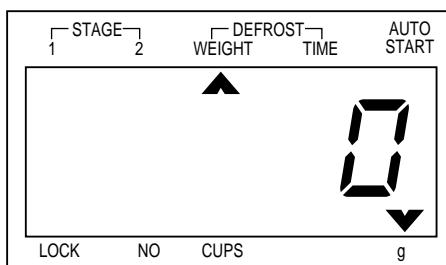
When TIME DEFROST is selected, the automatic cycle divides the defrosting time into periods of alternating defrost and stand times by cycling on and off.

DO THIS...

**AUTO
DEFROST**

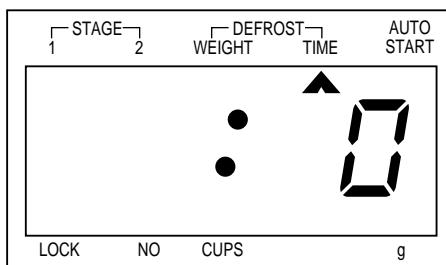
1. Touch **AUTO DEFROST** pad.

THIS HAPPENS...



The WEIGHT DEFROST indicator lights and "0" is displayed. And the "g" indicator starts blinking.

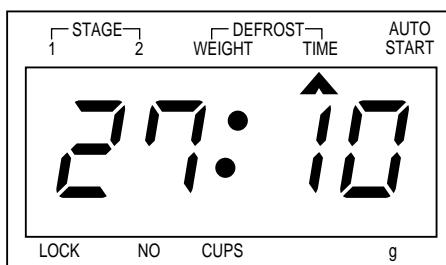
2. Touch **AUTO DEFROST** pad once more.



The TIME DEFROST indicator lights and ".0" is displayed.

3. Touch number pads for the defrosting time you want.

2 7 1 0



The display will show the numbers you pressed in the order you touched.

NOTE :

Your oven can be programmed for 99 minutes 99 seconds.
(99:99)

4. Touch **START** pad.

START

When you touch START pad, the TIME DEFROST indicator starts blinking to show the oven is in the TIME DEFROST mode. The display counts down the time to show you how much defrosting time is left in the TIME DEFROST mode. The oven beeps during the defrosting cycle to signal that the food needs to be turned or rearranged. When the defrosting time ends, you will hear 3 beeps.

NOTE : To prevent overdefrosting, thin areas or edges can be shielded with strips of aluminum foil.

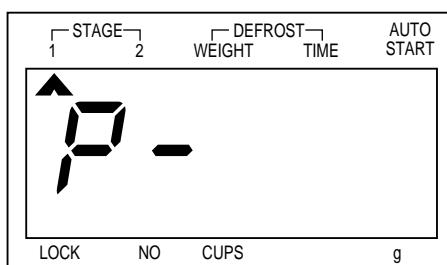
COOKING IN ONE STAGE

DO THIS...

THIS HAPPENS...

POWER

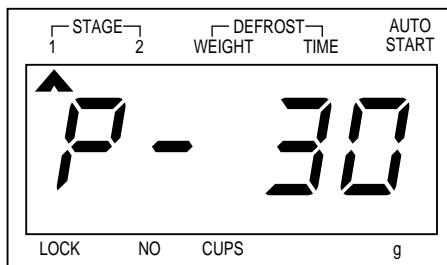
1. Touch **POWER** pad.



The STAGE1 indicator lights and "P-" is displayed.

3

2. Touch the number pad for the power level you want.



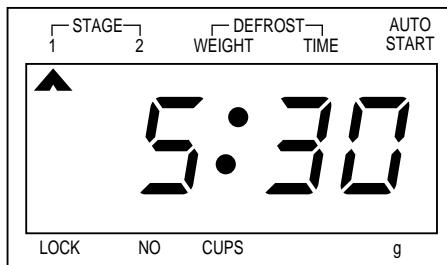
The display will show what you touched. This example shows power level 3.

NOTE :

If steps 1 and 2 are omitted, the oven will cook at full power.

5 3 0

3. Touch number pads for the cooking time.



The display will show the numbers you pressed in the order you touched.

NOTE :

Your oven can be programmed for 99 minutes 99 seconds.
(99:99)

START

When you touch **START** pad, the STAGE 1 indicator starts blinking to show the oven is cooking. The display counts down the time to show how much cooking time is left. When the cooking time ends, you will hear 3 beeps.

4. Touch **START** pad.

NOTE : Using lower power levels increase the cooking time which is recommended for foods such as cheese, milk and slow cooking of meats.

COOKING IN TWO STAGES

For best results, some recipes call for one power level for a certain length of time and another power level for a different length of time.

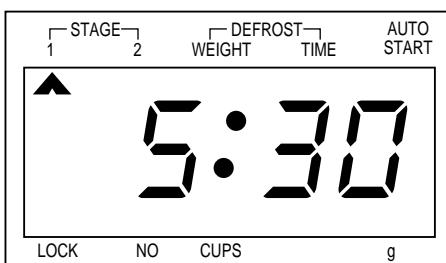
Your microwave oven can be set to change from one to another.

DO THIS...

5 3 0

1. Touch number pads for the cooking time you want in the first stage.

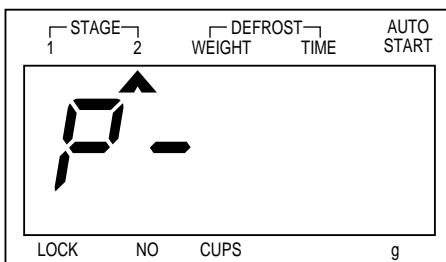
THIS HAPPENS...



The STAGE 1 indicator lights and the display will show the numbers you pressed in the order you touched. This example shows 5 minutes 30 seconds at full power.

POWER

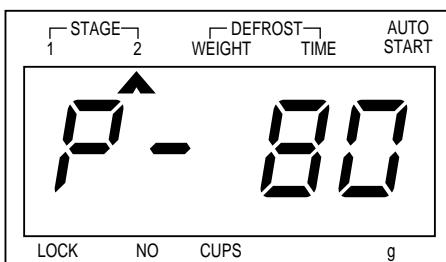
2. Touch **POWER** pad.



The STAGE 2 indicator lights and "P-" is displayed.

8

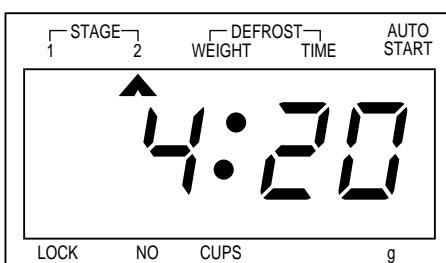
3. Touch the number pads for the power level you want in second stage.



The display will show what you touched.

4 2 0

4. Touch the number pads for the cooking time you want in the second stage.



The display will show the numbers you pressed in the order you touched. This example shows 4 minutes 20 seconds at power level 8.

START

5. Touch **START** pad.

When you touch **START** pad, both STAGE 1 & 2 indicator lights come on, STAGE1 indicator light starts blinking to show you that the oven is cooking in the first of two cook stages. The oven will cook at the power you selected for stage one. At the end of stage one, the oven will beep and start stage two, the STAGE 1 indicator goes off and the STAGE 2 indicator starts blinking. The display counts down the time remaining in stage two when stage two ends, you will hear 3 beeps.

WEIGHT DEFROSTING AND COOKING IN TWO STAGES

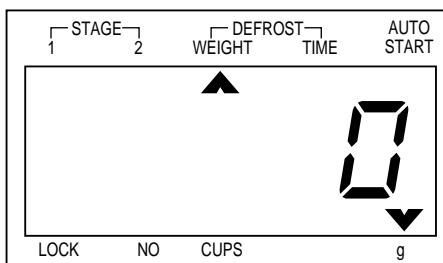
Some recipes require frozen foods to be thawed before cooking.
This oven can be programmed to automatically defrost foods before cooking.

DO THIS...

THIS HAPPENS...

**AUTO
DEFROST**

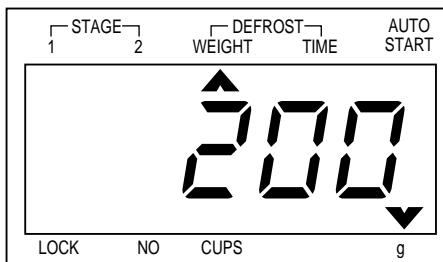
1. Touch **AUTO DEFROST** pad.



The WEIGHT DEFROST indicator lights and "0" is displayed. And the "lb" indicator starts blinking.

2 0 0

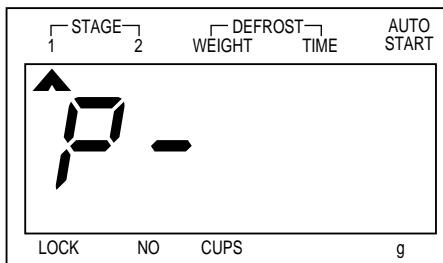
2. Touch number pads for the defrosting weight you want.



The display will show the numbers you pressed in the order you touched.

POWER

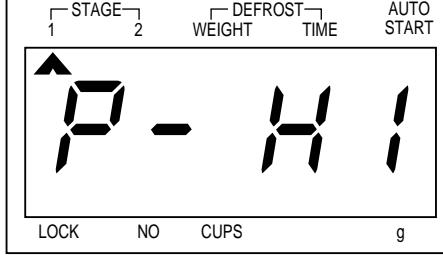
3. Touch **POWER** pad.



The STAGE 1 indicator lights and "P-" is displayed.

POWER

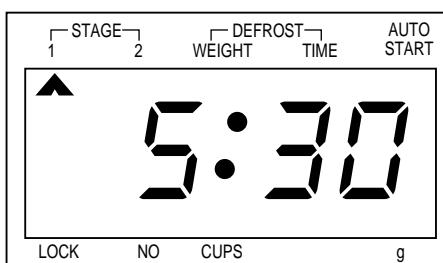
4. Touch **POWER** pad once more.



"P-HI" will appear in the displayed. This example shows full power (100%).

5 3 0

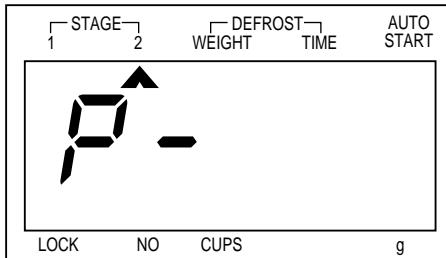
5. Touch number pads for the cooking time you want in the first stage.



The display will show the numbers you pressed in the order you touched. This example shows 5 minutes 30 seconds at full power.

DO THIS...**THIS HAPPENS...****POWER**

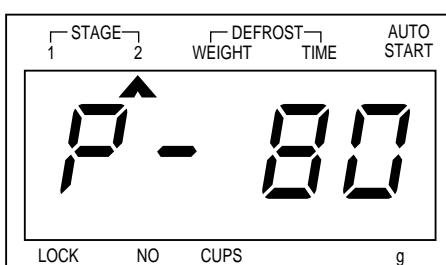
6. Touch
- POWER**
- pad.



The STAGE2 indicator lights and "P-" is displayed.

8

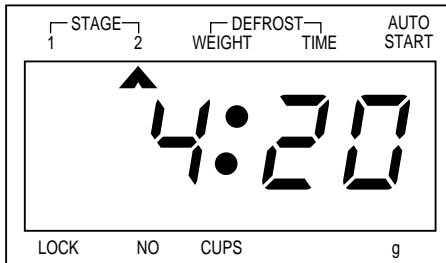
7. Touch the number pads for the power level you want in the second stage.



The display will show what you touched.

4 2 0

8. Touch the number pads for the cooking time you want in the second stage.



The display will show the numbers you pressed in the order you touched. This example shows 4 minutes 20 seconds at power level 8.

START

9. Touch
- START**
- pad.

When you touch **START** pad, the WEIGHT DEFROST, STAGE 1 and STAGE 2 indicators come on to confirm the power levels selected. The WEIGHT DEFROST indicator starts blinking to show you that the oven is in WEIGHT DEFROST mode. The display counts down the time remaining in WEIGHT DEFROST mode. Turn over, break a part and redistribute at a beep.

At the end of WEIGHT DEFROST mode, the oven will beep and start stage one. The WEIGHT DEFROST indicator goes off and the STAGE 1 indicator starts blinking. The display counts down the time remaining in stage one.

At the end of stage one, the oven will beep and start stage two. The STAGE 1 indicator goes off and the STAGE 2 indicator starts blinking.

The display counts down the time remaining in stage two when stage two ends, you will hear 3 beeps.

AUTO START

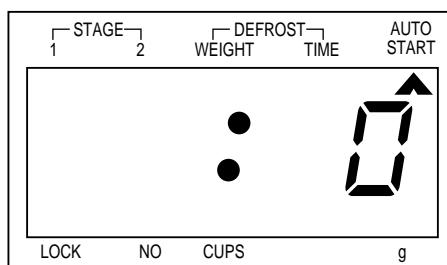
Allows you to program cooking to start at a time you select.
The food will automatically start cooking at the desired time.
Program is able up to 2 stages (not acceptable DEFROST)

DO THIS...

THIS HAPPENS...

1. Program the desired power level and cooking time.

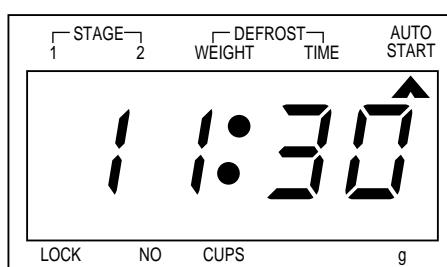
**CLOCK/
A.START**



2. Touch **CLOCK/A.START** pad.

The AUTO START indicator lights and “:0” is displayed.

1 1 3 0



3. Enter the desired start time by pressing the number pads.

The display will show the numbers you pressed in the order you touched.
This example shows 11:30

START

4. Touch **START** pad.

When you touch START pad, the present time appears in the display and the cooking program indicators come on.

The AUTO START indicator and the colon start blinking. When the selected start time arrives the oven begins operating and the oven light turns on. The AUTO START indicator goes off and the next stage indicator begins to blink. When the cooking is completed you will hear 3 beeps. The oven turns off and the present time appears in the display.

NOTE : AUTO START can be used for time cooking, if clock is set. If the oven door is opened after programming AUTO START, it is necessary to touch the START pad for the time of day to appear in the readout so that the oven will automatically begin programmed cooking at the chosen AUTO START time. Before setting, check to make sure the clock is showing the correct time of day.

FEEDING BOTTLE

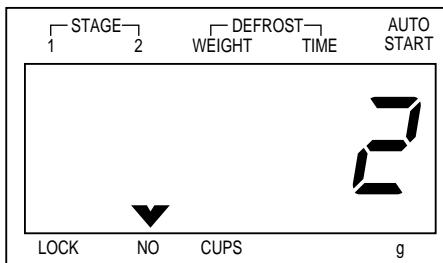
Feeding Bottle is to use to sterilize feeding bottles.

DO THIS...

FEEDING
BOTTLE

1. Touch FEEDING BOTTLE pad.

THIS HAPPENS...



When you touch Feeding Bottle pad, "2" is displayed.

After 1.5 seconds, the display is changed into cooking time of quantity and the oven starts cooking.

FEEDING BOTTLE (The number of feeding bottle)

- i 2 ea : Touch Feeding Bottle once.
- i 4 ea : Touch Feeding Bottle once twice within 1.5 seconds.
- i 6 ea : Touch Feeding Bottle three times within 1.5 seconds.

TO CHECK AUTO START TIME

Once you have correctly programmed the oven for AUTO START, the present time will appear on the display.

DO THIS...

CLOCK/
A.START

1. Touch CLOCK/A.START pad.

THIS HAPPENS...

The programmed AUTO START time will appear on the display for 3 seconds.

SPEEDY COOK

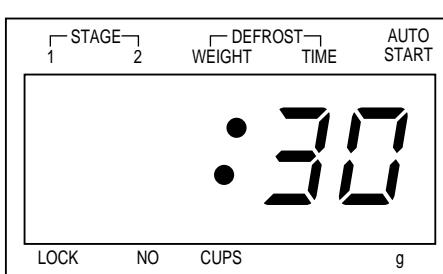
SPEEDY COOK allows you to reheat for 30 seconds at 100% (full power) by simply touching the SPEEDY COOK pad. By repeatedly touching the SPEEDY COOK pad, you can also extend reheating time to 5 minutes by 30 seconds.

DO THIS...

SPEEDY
COOK

1. Touch SPEEDY COOK pad.

THIS HAPPENS...



When you touch SPEEDY COOK, ":30" is displayed.

After 1.5 seconds, the oven starts reheating.

ONE TOUCH COOKING

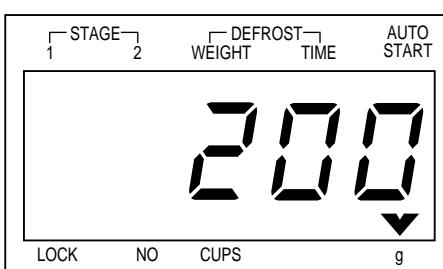
One touch cook allows you to cook or reheat many of your favorite foods by touching just one pad. To increase quantity, touch chosen pad until number in display is same as desired quantity to cook. (except for MUFFIN & DINNER PLATE)

DO THIS...

**FROZEN
PIZZA**

1. Touch **FROZEN PIZZA** pad.

THIS HAPPENS...



When you touch **FROZEN PIZZA** pad, "200" is displayed.
After 1.5 seconds, the display changed into cooking time of quantity and the oven starts cooking.

*FROZEN PIZZA

- i 200g : Touch FROZEN PIZZA once.
- i 300g : Touch FROZEN PIZZA twice within 1.5 seconds.

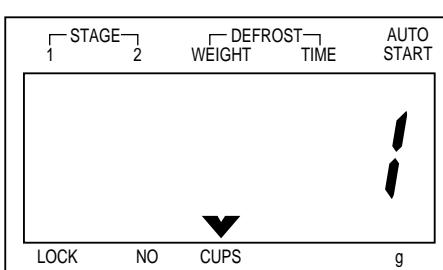
NOTE : 1. Use only one frozen pizza at a time.
2. Use only frozen pizza for microwave oven.
3. If the cheese of frozen pizza does not melt sufficiently, cook a few seconds longer.
4. Some brands of frozen pizza may require more or less cooking time.

DO THIS...

BEVERAGE

1. Touch **BEVERAGE** pad.

THIS HAPPENS...



When you touch **BEVERAGE** pad, "1" is displayed.
After 1.5 seconds, the display changed into cooking time of quantity and the oven starts cooking.

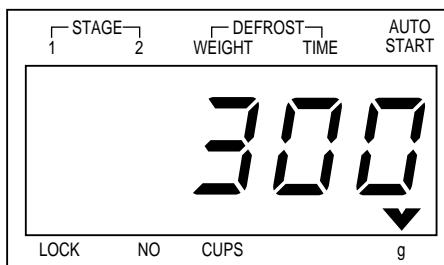
* BEVERAGE* (250ml/cup)

- i 1 cup (mug) : Touch BEVERAGE once.
- i 2 cups (mugs) : Touch BEVERAGE twice within 1.5 seconds.
- i 3 cups (mugs) : Touch BEVERAGE three times within 1.5 seconds.

NOTE : 1. This setting is good for restoring cooled beverage to a better drinking temperature.
2. Stir after cooking.

DO THIS...**DINNER PLATE**

1. Touch **DINNER PLATE** pad.

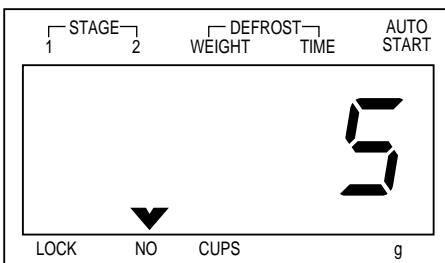
THIS HAPPENS...

When you touch **DINNER PLATE** pad, "300" is displayed.
After the 1.5 seconds, the display changed into cooking time of quantity and the oven starts cooking.

NOTE : For best results, consult the cookbook.

DO THIS...**MUFFIN**

2. Touch **MUFFIN** pad.

THIS HAPPENS...

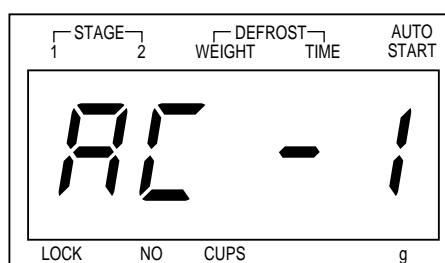
When you touch **MUFFIN** pad, "5" is displayed.
After the 1.5 seconds, the display changed into cooking time of quantity and the oven starts cooking.

AUTO COOK (MENU & WEIGHT)

Auto cook allows you to cook or reheat many of your favorite foods by repeatedly touching menu pad.
After the menu selection, touch chosen pad until number in display is same as desired quantity to cook.

DO THIS...**MENU**

1. Touch **MENU** pad.

THIS HAPPENS...

When you touch **MENU** pad, "AC-1" is displayed.
The display will then begin blinking.
By repeatedly touching this pad, you can select other food category as shown in the chart below.

CATEGORY

- AC-1
- AC-2
- AC-3
- AC-4
- AC-5

FOOD

- BAKED POTATO
- FRESH VEGETABLE
- SOUP
- FISH FILLETS
- MEAT LOAF

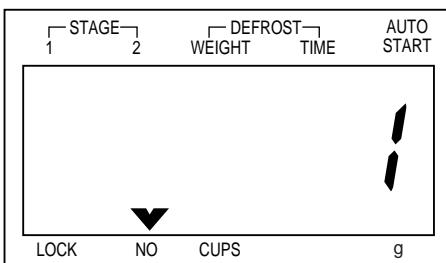
TOUCH PAD

- Touch **MENU** once.
- Touch **MENU** twice.
- Touch **MENU** three times.
- Touch **MENU** four times.
- Touch **MENU** five times.

DO THIS...

WEIGHT

1. Touch WEIGHT pad.



When you touch WEIGHT pad,
“1” is displayed.

After 1.5 seconds, the display changed
into cooking time of quantity and the
oven starts cooking.

* BAKED POTATO* (156g~184g)

- 1 NO(ea.) : Touch WEIGHT once.
- 2 NO(ea.) : Touch WEIGHT twice within 1.5 seconds.
- 3 NO(ea.) : Touch WEIGHT three times within 1.5 seocnds.

* FRESH VEGETABLE*

- 227g : Touch WEIGHT once.
- 340g : Touch WEIGHT twice within 1.5 seconds.

* SOUP*

- 227g : Touch WEIGHT once.
- 340g : Touch WEIGHT twice within 1.5 seconds.

* FISH FILLETS*

- 227g : Touch WEIGHT once.
- 454g : Touch WEIGHT twice within 1.5 seconds.

* MEAT LOAF*

- 454g : Touch WEIGHT once.
- 680g : Touch WEIGHT twice within 1.5 second

MORE, LESS

MORE pad : adds for 10 seconds to 20 seconds.

LESS pad : remove for 10 seconds to 20 seconds.

These pad only work one touch cooking and feeding bottle mode.

And always input previously

CHILD SAFETY LOCK

The safety lock prevents unwanted oven operation such as by small children.

To set, press STOP/CLEAR for 3 seconds, LOCK indicator lights.

To cancel, press STOP/CLEAR for 3 seconds, LOCK indicator goes off.

TO STOP THE OVEN WHILE IT IS OPERATING

1. Press STOP/CLEAR pad.
 - You can restart the oven by touching START pad.
 - You must enter in new instructions.
2. Open the door.
 - You can restart the oven by closing the door and touching START.

NOTE : Oven stops operating when door is opened.

HOW TO SET THE OVEN CONTROL(KOR-971Q0A)

SETTING THE CLOCK

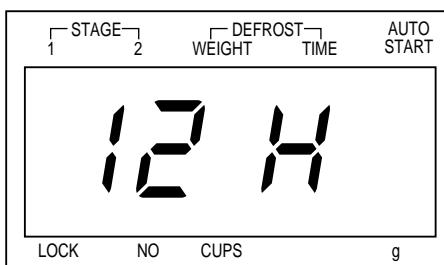
When the oven is first plugged in, the display will flash “:0” and a tone will sound. If the AC power ever goes off, the display will flash “:0” when the power comes back on.

DO THIS...

**CLOCK /
A. START**

1. Touch **CLOCK/A.START** pad.

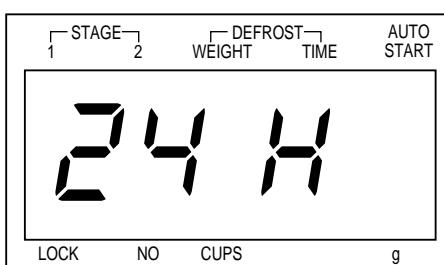
THIS HAPPENS...



This is a 12 hour clock system.

**CLOCK /
A. START**

2. Touch **CLOCK/A.START** pad once more.



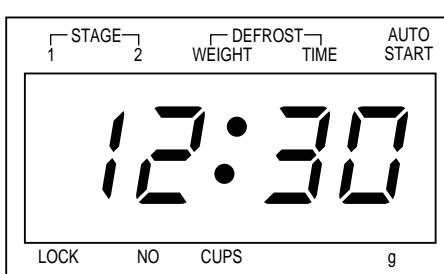
This is a 24 hour clock system.

NOTE :

This oven is multiple clock system. If you want 12 hour clock system, can be omitted this step.

1 2 3 0

3. Enter the correct time of day by touching the numbers in sequence.



The display will then begin blinking.

**CLOCK /
A. START**

4. Touch **CLOCK/A.START** pad.

The display stop blinking, and the colon starts blinking.

If you selected 12 hour clock system, this digital clock allows you to set from 1:00 to 12:59.

If you selected 24 hour clock system, this digital clock allows you to set from 0:00 to 23:59.

NOTE : If you attempt to enter an incorrect time, the time will not be set and a error signal tone will sound. Touch the **CLOCK/A.START** pad re-enter the time.

WEIGHT DEFROSTING

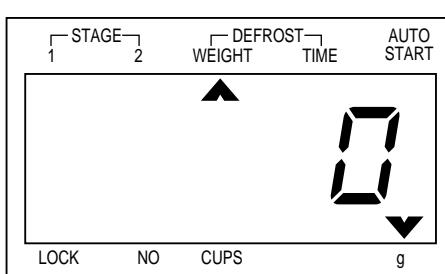
WEIGHT DEFROST lets you easily defrost food by eliminating guesswork in determining defrosting time. The minimum weight for WEIGHT DEFROST is 200g. The maximum weight for WEIGHT DEFROST is 3000g. Follow the steps below for easy defrosting.

DO THIS...

**AUTO
DEFROST**

1. Touch **AUTO DEFROST** pad.

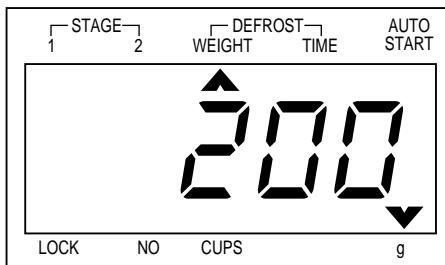
THIS HAPPENS...



The WEIGHT DEFROST indicator lights and "0" is displayed. And the "lb" indicator starts blinking.

2 0 0

2. Touch number pads for the defrosting weight you want.



The display will show the numbers you pressed in the order you touched.

START

3. Touch **START** pad.

WEIGHT DEFROSTING begins. The defrosting time is automatically determined by the food category and weight entered.

The g indicator goes off and the WEIGHT DEFROST indicator blinks and the defrosting time counts down in the display window. The oven beeps during the defrosting cycle to signal that the food needs to be turned or rearranged. When the defrosting time ends, you will hear 3 beeps.

NOTE : To prevent overdefrosting, thin areas or edges can be shielded with strips of aluminum foil.

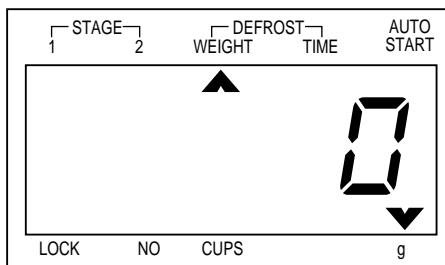
TIME DEFROSTING

When TIME DEFROST is selected, the automatic cycle divides the defrosting time into periods of alternating defrost and stand times by cycling on and off.

DO THIS...

**AUTO
DEFROST**

1. Touch **AUTO DEFROST** pad.

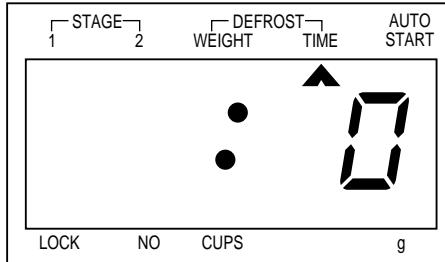


THIS HAPPENS...

The WEIGHT DEFROST indicator lights and "0" is displayed. And the "g" indicator starts blinking.

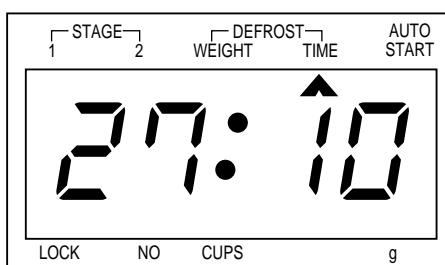
**AUTO
DEFROST**

2. Touch **AUTO DEFROST** pad once more.



2 7 1 0

3. Touch number pads for the defrosting time you want.



The TIME DEFROST indicator lights and ":0" is displayed.

The display will show the numbers you pressed in the order you touched.

NOTE :

Your oven can be programmed for 99 minutes 99 seconds.
(99:99)

START

4. Touch **START** pad.

When you touch START pad, the TIME DEFROST indicator starts blinking to show the oven is in the TIME DEFROST mode. The display counts down the time to show you how much defrosting time is left in the TIME DEFROST mode. The oven beeps during the defrosting cycle to signal that the food needs to be turned or rearranged. When the defrosting time ends, you will hear 3 beeps.

NOTE : To prevent overdefrosting, thin areas or edges can be shielded with strips of aluminum foil.

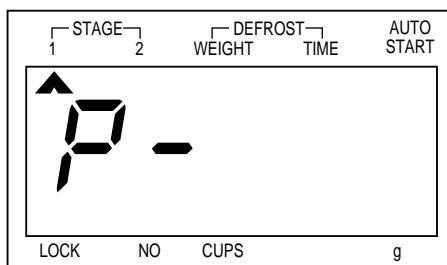
COOKING IN ONE STAGE

DO THIS...

THIS HAPPENS...

POWER

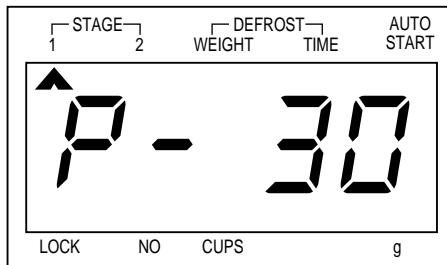
1. Touch **POWER** pad.



The STAGE1 indicator lights and "P-" is displayed.

3

2. Touch the number pad for the power level you want.



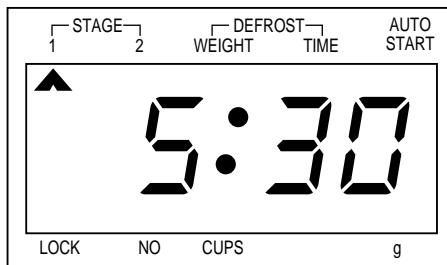
The display will show what you touched. This example shows power level 3.

NOTE :

If steps 1 and 2 are omitted, the oven will cook at full power.

5 3 0

3. Touch number pads for the cooking time.



The display will show the numbers you pressed in the order you touched.

NOTE :

Your oven can be programmed for 99 minutes 99 seconds.
(99:99)

START

When you touch **START** pad, the STAGE 1 indicator starts blinking to show the oven is cooking. The display counts down the time to show how much cooking time is left. When the cooking time ends, you will hear 3 beeps.

4. Touch **START** pad.

NOTE : Using lower power levels increase the cooking time which is recommended for foods such as cheese, milk and slow cooking of meats.

COOKING IN TWO STAGES

For best results, some recipes call for one power level for a certain length of time and another power level for a different length of time.

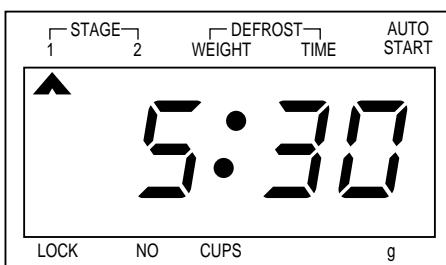
Your microwave oven can be set to change from one to another.

DO THIS...

5 3 0

1. Touch number pads for the cooking time you want in the first stage.

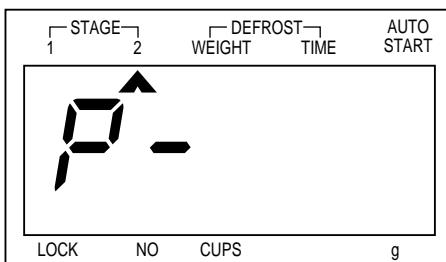
THIS HAPPENS...



The STAGE 1 indicator lights and the display will show the numbers you pressed in the order you touched. This example shows 5 minutes 30 seconds at full power.

POWER

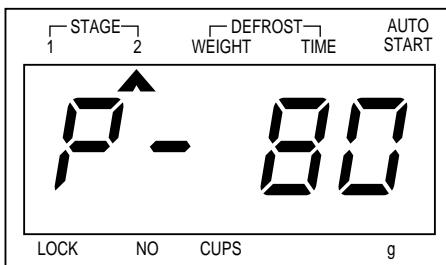
2. Touch **POWER** pad.



The STAGE 2 indicator lights and "P-" is displayed.

8

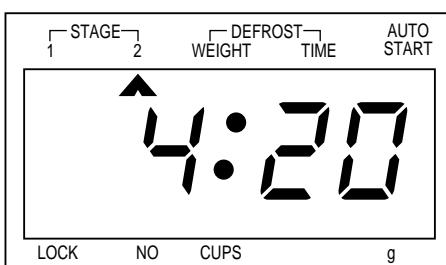
3. Touch the number pads for the power level you want in second stage.



The display will show what you touched.

4 2 0

4. Touch the number pads for the cooking time you want in the second stage.



The display will show the numbers you pressed in the order you touched. This example shows 4 minutes 20 seconds at power level 8.

START

5. Touch **START** pad.

When you touch START pad, both STAGE 1 & 2 indicator lights come on, STAGE1 indicator light starts blinking to show you that the oven is cooking in the first of two cook stages. The oven will cook at the power you selected for stage one. At the end of stage one, the oven will beep and start stage two, the STAGE 1 indicator goes off and the STAGE 2 indicator starts blinking. The display counts down the time remaining in stage two when stage two ends, you will hear 3 beeps.

WEIGHT DEFROSTING AND COOKING IN TWO STAGES

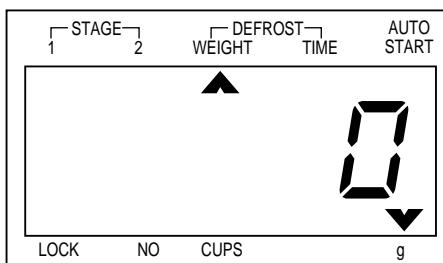
Some recipes require frozen foods to be thawed before cooking.
This oven can be programmed to automatically defrost foods before cooking.

DO THIS...

THIS HAPPENS...

**AUTO
DEFROST**

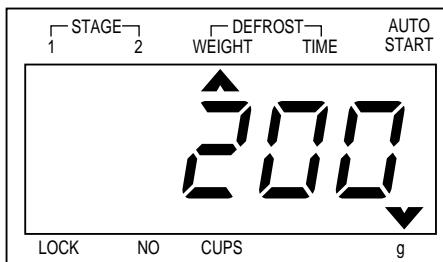
1. Touch **AUTO DEFROST** pad.



The WEIGHT DEFROST indicator lights and "0" is displayed. And the "lb" indicator starts blinking.

2 0 0

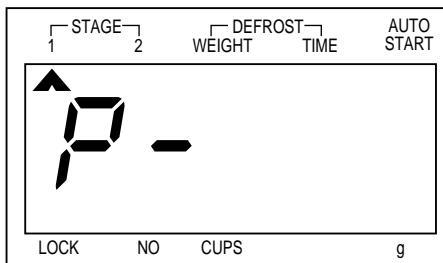
2. Touch number pads for the defrosting weight you want.



The display will show the numbers you pressed in the order you touched.

POWER

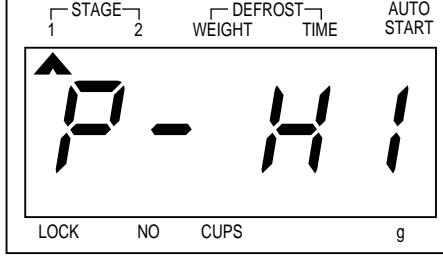
3. Touch **POWER** pad.



The STAGE 1 indicator lights and "P-" is displayed.

POWER

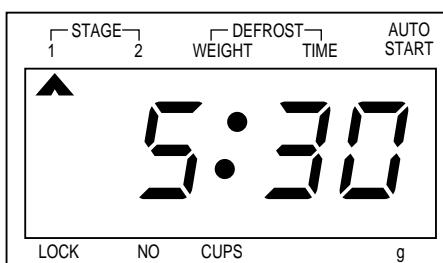
4. Touch **POWER** pad once more.



"P-HI" will appear in the displayed. This example shows full power (100%).

5 3 0

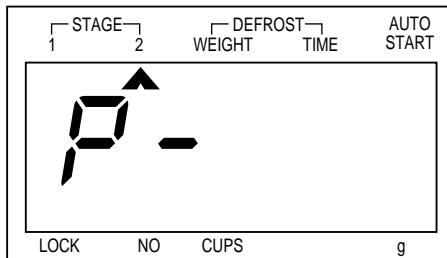
5. Touch number pads for the cooking time you want in the first stage.



The display will show the numbers you pressed in the order you touched. This example shows 5 minutes 30 seconds at full power.

DO THIS...**THIS HAPPENS...****POWER**

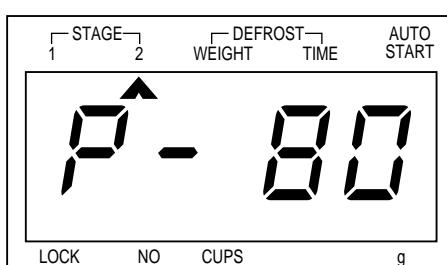
6. Touch
- POWER**
- pad.



The STAGE2 indicator lights and "P-" is displayed.

8

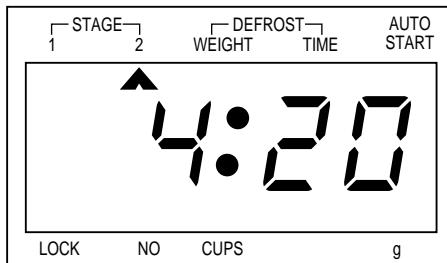
7. Touch the number pads for the power level you want in the second stage.



The display will show what you touched.

4 2 0

8. Touch the number pads for the cooking time you want in the second stage.



The display will show the numbers you pressed in the order you touched. This example shows 4 minutes 20 seconds at power level 8.

START

9. Touch
- START**
- pad.

When you touch **START** pad, the WEIGHT DEFROST, STAGE 1 and STAGE 2 indicators come on to confirm the power levels selected. The WEIGHT DEFROST indicator starts blinking to show you that the oven is in WEIGHT DEFROST mode. The display counts down the time remaining in WEIGHT DEFROST mode. Turn over, break a part and redistribute at a beep.

At the end of WEIGHT DEFROST mode, the oven will beep and start stage one. The WEIGHT DEFROST indicator goes off and the STAGE 1 indicator starts blinking. The display counts down the time remaining in stage one.

At the end of stage one, the oven will beep and start stage two. The STAGE 1 indicator goes off and the STAGE 2 indicator starts blinking.

The display counts down the time remaining in stage two when stage two ends, you will hear 3 beeps.

AUTO START

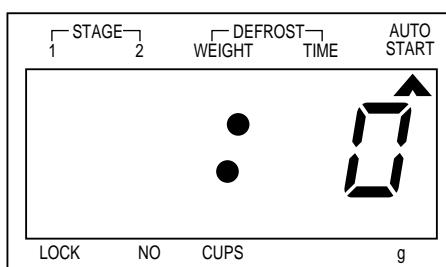
Allows you to program cooking to start at a time you select.
The food will automatically start cooking at the desired time.
Program is able up to 2 stages (not acceptable DEFROST)

DO THIS...

THIS HAPPENS...

1. Program the desired power level and cooking time.

**CLOCK/
A.START**

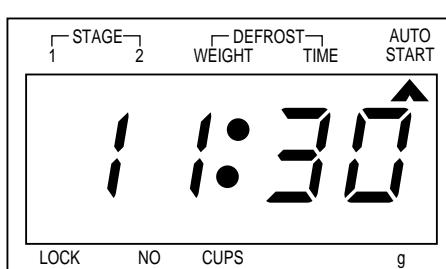


The AUTO START indicator lights and
“:0” is displayed.

2. Touch **CLOCK/A.START** pad.

1 1 3 0

3. Enter the desired start time by pressing the number pads.



The display will show the numbers you pressed in the order you touched.
This example shows 11:30

START

4. Touch **START** pad.

When you touch START pad, the present time appears in the display and the cooking program indicators come on.

The AUTO START indicator and the colon start blinking. When the selected start time arrives the oven begins operating and the oven light turns on. The AUTO START indicator goes off and the next stage indicator begins to blink. When the cooking is completed you will hear 3 beeps. The oven turns off and the present time appears in the display.

NOTE : AUTO START can be used for time cooking, if clock is set. If the oven door is opened after programming AUTO START, it is necessary to touch the START pad for the time of day to appear in the readout so that the oven will automatically begin programmed cooking at the chosen AUTO START time. Before setting, check to make sure the clock is showing the correct time of day.

FEEDING BOTTLE

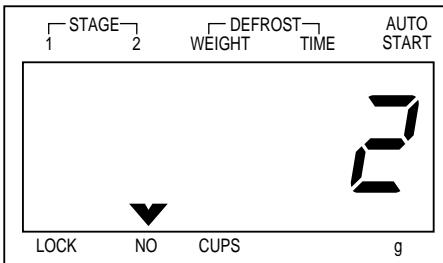
Feeding Bottle is to use to sterilize feeding bottles.

DO THIS...

**FEEDING
BOTTLE**

1. Touch **FEEDING BOTTLE** pad.

THIS HAPPENS...



When you touch Feeding Bottle pad,
“2” is displayed.

After 1.5 seconds, the display is
changed into cooking time of quantity
and the oven starts cooking.

FEEDING BOTTLE (The number of feeding bottle)

- i 2 ea : Touch Feeding Bottle once.
- i 4 ea : Touch Feeding Bottle once twice within 1.5 seconds.
- i 6 ea : Touch Feeding Bottle three times within 1.5 seconds.

TO CHECK AUTO START TIME

Once you have correctly programmed the oven for AUTO START, the present time will appear on the display.

DO THIS...

**CLOCK/
A.START**

1. Touch **CLOCK/A.START** pad.

THIS HAPPENS...

The programmed AUTO START time will appear on the display for 3 seconds.

SPEEDY COOK

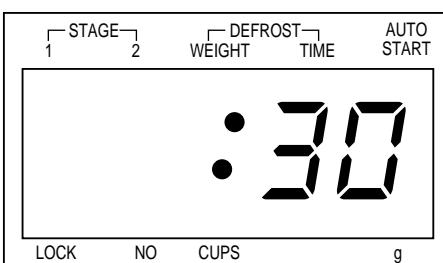
SPEEDY COOK allows you to reheat for 30 seconds at 100% (full power) by simply touching the SPEEDY COOK pad. By repeatedly touching the SPEEDY COOK pad, you can also extend reheating time to 5 minutes by 30 seconds.

DO THIS...

**SPEEDY
COOK**

1. Touch **SPEEDY COOK** pad.

THIS HAPPENS...



When you touch SPEEDY COOK,
“:30” is displayed.

After 1.5 seconds, the oven starts
reheating.

ONE TOUCH COOKING

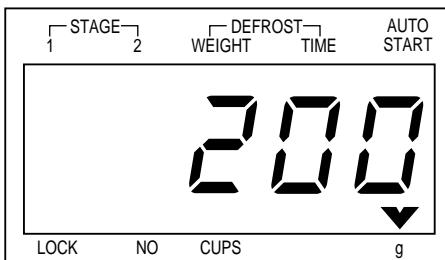
One touch cook allows you to cook or reheat many of your favorite foods by touching just one pad. To increase quantity, touch chosen pad until number in display is same as desired quantity to cook. (except for MUFFIN & DINNER PLATE)

DO THIS...

**FROZEN
PIZZA**

1. Touch **FROZEN PIZZA** pad.

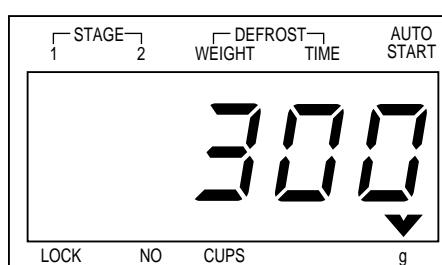
THIS HAPPENS...



When you touch **FROZEN PIZZA** pad, "200" is displayed.

After 1.5 seconds, the display changed into cooking time of quantity and the oven starts cooking.

2. Touch **FROZEN PIZZA** pad one more.



When you touch **FROZEN PIZZA** pad, "300" is displayed.

*FROZEN PIZZA

- i 200g : Touch FROZEN PIZZA once.
- i 300g : Touch FROZEN PIZZA twice within 1.5 seconds.

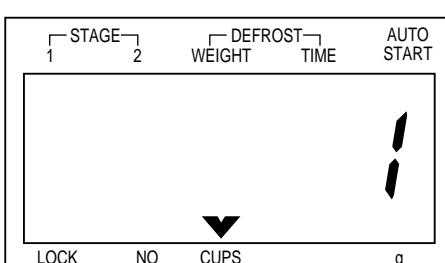
- NOTE :**
1. Use only one frozen pizza at a time.
 2. Use only frozen pizza for microwave oven.
 3. If the cheese of frozen pizza does not melt sufficiently, cook a few seconds longer.
 4. Some brands of frozen pizza may require more or less cooking time.

DO THIS...

BEVERAGE

1. Touch **BEVERAGE** pad.

THIS HAPPENS...



When you touch **BEVERAGE** pad, "1" is displayed.

After 1.5 seconds, the display changed into cooking time of quantity and the oven starts cooking.

*** BEVERAGE*** (250ml/cup)

- | 1 cup (mug) : Touch BEVERAGE once.
- | 2 cups (mugs) : Touch BEVERAGE twice within 1.5 seconds.
- | 3 cups (mugs) : Touch BEVERAGE three times within 1.5 seconds.

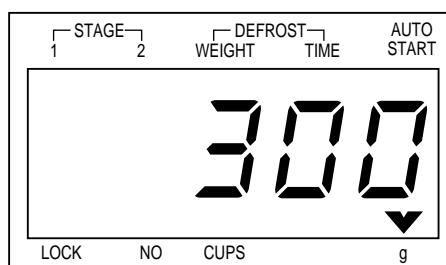
NOTE : 1. This setting is good for restoring cooled beverage to a better drinking temperature.
2. Stir after cooking.

DO THIS...

DINNER PLATE

1. Touch **DINNER PLATE** pad.

THIS HAPPENS...



When you touch **DINNER PLATE** pad, "300" is displayed.

After the 1.5 seconds, the display changed into cooking time of quantity and the oven starts cooking.

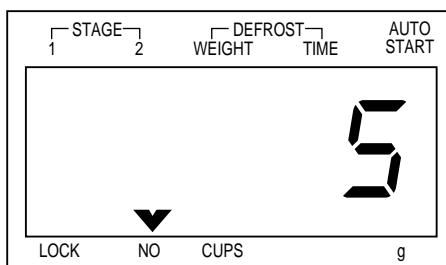
NOTE : For best results, consult the cookbook.

DO THIS...

MUFFIN

2. Touch **MUFFIN** pad.

THIS HAPPENS...



When you touch **MUFFIN** pad, "5" is displayed.

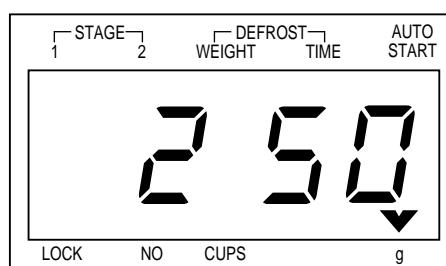
After the 1.5 seconds, the display changed into cooking time of quantity and the oven starts cooking.

DO THIS...

SOUP

1. Touch **SOUP** pad.

THIS HAPPENS...



When you touch **SOUP** pad, "250" is displayed.

After the 1.5 seconds, the display changed into cooking time of quantity and the oven starts cooking.

*** SOUP***

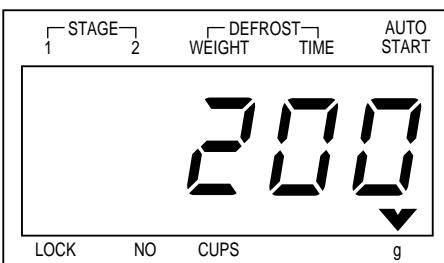
- ⋮ 250g : Touch SOUP once.
- ⋮ 350g : Touch SOUP twice within 1.5 seconds.

NOTE : For best results, consult the cookbook.

DO THIS...

**FRESH
VEGETABLE**

1. Touch **FRESH VEGETABLE** pad.



THIS HAPPENS...

When you touch **FRESH VEGETABLE** pad, "200" is displayed.
After the 1.5 seconds, the display changed into cooking time of quantity and the oven starts cooking.

*** FRESH VEGETABLE***

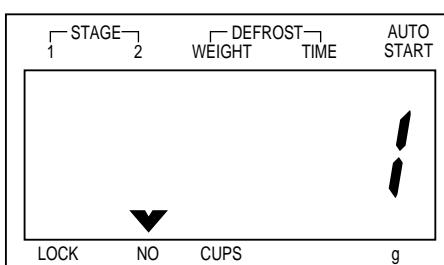
- ⋮ 200g : Touch FRESH VEGETABLE once.
- ⋮ 300g : Touch FRESH VEGETABLE twice within 1.5 seconds.

NOTE : For best results, consult the cookbook.

DO THIS...

**BAKED
POTATO**

1. Touch **BAKED POTATO** pad.



THIS HAPPENS...

When you touch **BAKED POTATO** pad, "1" is displayed.
After the 1.5 seconds, the display changed into cooking time of quantity and the oven starts cooking.

*** BAKED POTATO* (160~180g/ea.)**

- ⋮ 1 NO (ea) : Touch BAKED POTATO once.
- ⋮ 2 NO (ea) : Touch BAKED POTATO twice within 1.5 seconds.
- ⋮ 3 NO (ea) : Touch BAKED POTATO three times within 1.5 seconds.

NOTE : For best results, consult the cookbook.

MORE, LESS

MORE pad : adds for 10 seconds to 20 seconds.

LESS pad : remove for 10 seconds to 20 seconds.

These pad only work one touch cooking and feeding bottle mode.

And always input previously

CHILD SAFETY LOCK

The safety lock prevents unwanted oven operation such as by small children.

To set, press STOP/CLEAR for 3 seconds, LOCK indicator lights.

To cancel, press STOP/CLEAR for 3 seconds, LOCK indicator goes off.

TO STOP THE OVEN WHILE IT IS OPERATING

1. Press STOP/CLEAR pad.
 - You can restart the oven by touching START pad.
 - You must enter in new instructions.
2. Open the door.
 - You can restart the oven by closing the door and touching START.

NOTE : Oven stops operating when door is opened.

INTERLOCK MECHANISM FUNCTIONS AND ADJUSTMENTS

The door lock mechanism is a device which has been specially designed to completely eliminate microwave radiation when the door is opened during operation, and thus to perfectly prevent the danger resulting from the leakage of microwave.

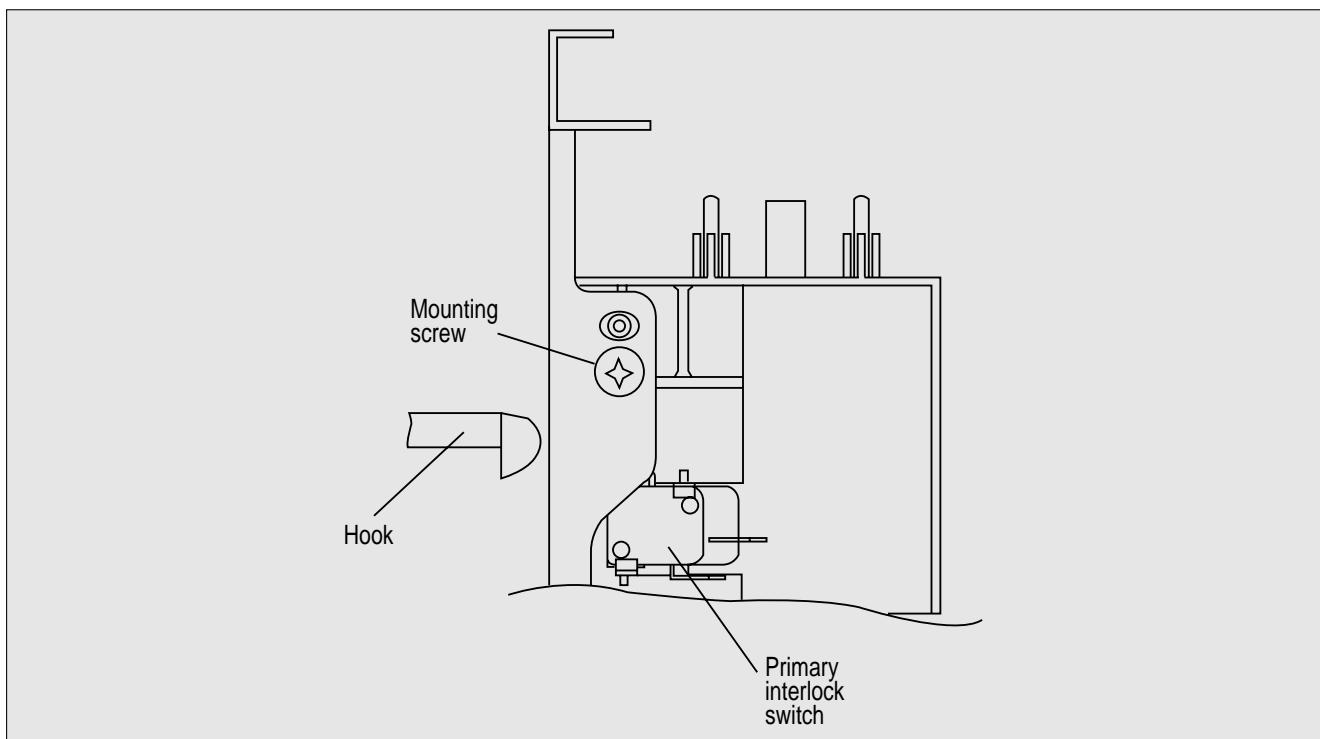
(1) Primary interlock switch

When the door is closed, the hook locks the oven door.

If the door is not closed properly, the oven will not operate.

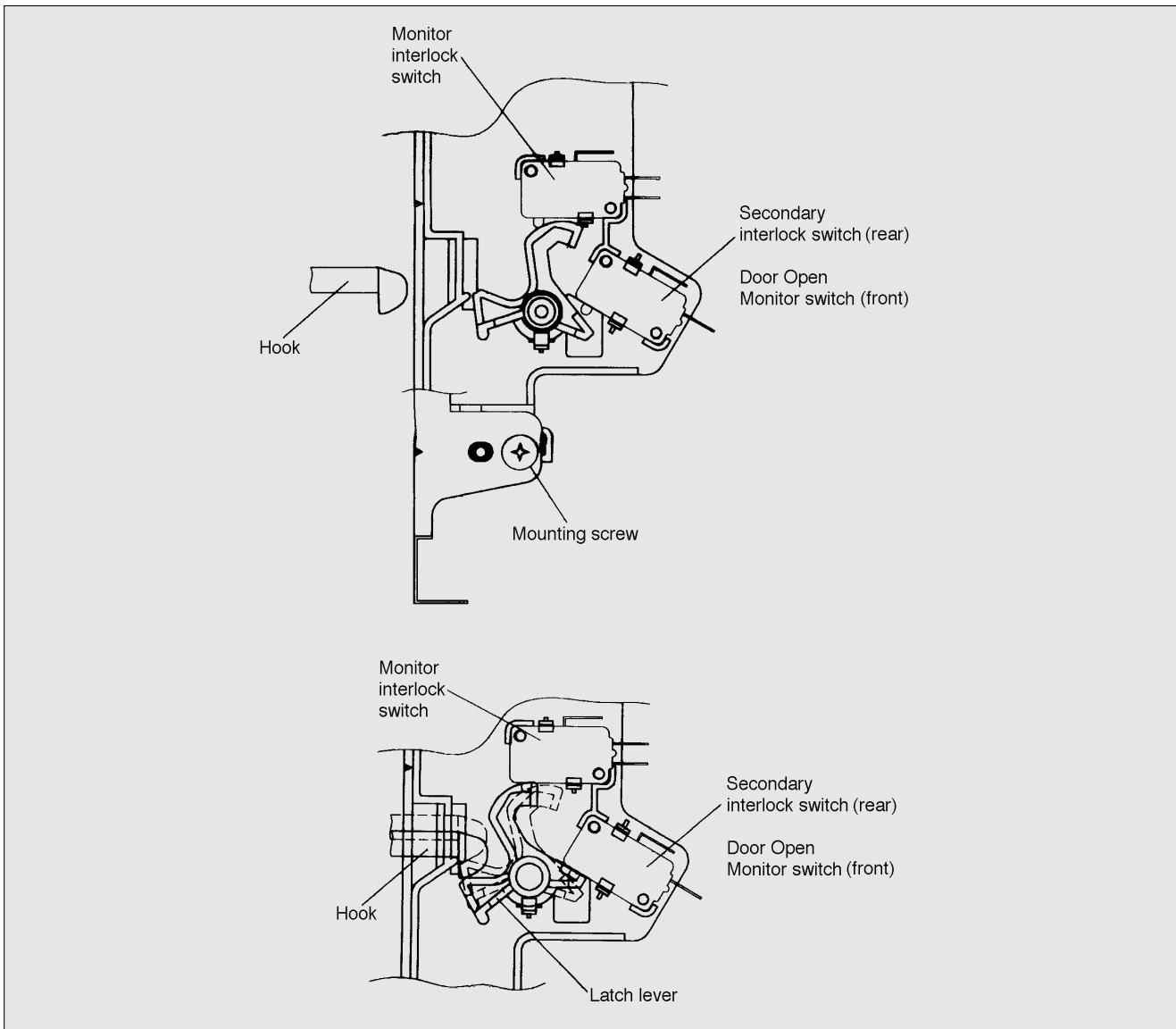
When the door is closed, the hook pushes the lever downward.

The lever press the button of the primary interlock switch to bring it under 'ON' condition.



(2) Monitor interlock switch

When the door is closed, the hook pushes the lever forward, and pushes the Latch Lever downward the lever press the button of the interlock monitor switch to bring it under 'OFF' condition. The latch Lever press the button on the secondary interlock switch to bring it under 'ON' condition.



- Adjustment

Interlock monitor switch

When the door is closed, the monitor switch should be opened before other switches close.
When the door is opened, the monitor switch should be closed after other switches open.

Adjustment steps :

- Loosen the two mounting screws.
- Adjust the interlock switch assembly position.
- Make sure that the latch lever moves smoothly after adjustment is completed.
- Completely tighten the two mounting screws.

PRECAUTIONS FOR DISASSEMBLY AND REPAIR

- Cautions to be observed when trouble shooting.

Unlike many other appliances, the microwave oven is high-voltage, high-current equipment. It is completely safe during normal operation. However, carelessness in servicing the oven can result in an electric shock or possible danger from a short circuit.

You are asked to observe the following precautions carefully.

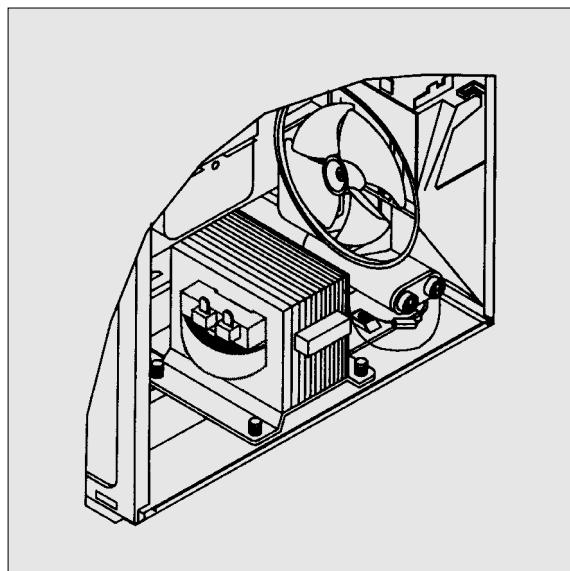
- (1) Always remove the power plug from the outlet before servicing.
- (2) Use an insulated screwdriver and wear rubber gloves when servicing the high voltage side.
- (3) Warning about the electric charge in the high voltage capacitor. When inspecting and repairing the high voltage side, always short the capacitor terminals and make sure of discharge.

1. Check the earthing.

Do not operate on a 2-wire extension cord.

The microwave oven is designed to be used when earthed.

It is imperative, therefore, to make sure it is earthed properly before beginning repair work.



2. Warning about the electric charge in the high voltage capacitor.

For about 30 seconds after the operation stops, electric charge remains in the high voltage capacitor. When replacing or checking parts, short between oven chassis and the negative high terminal of the high voltage capacitor, by using a properly insulated screw driver to discharge.

- (4) When the 20 Amp fuse (normal blow type) is blown out due to the operation of the monitor switch; replace primary, secondary interlock switch and monitor switch. Refer to 34 page for the necessary adjustment.
- (5) After repair or replacement of parts, make sure that the screws are properly tightened and all electrical connections are tightened.
- (6) Do not operate without cabinet.

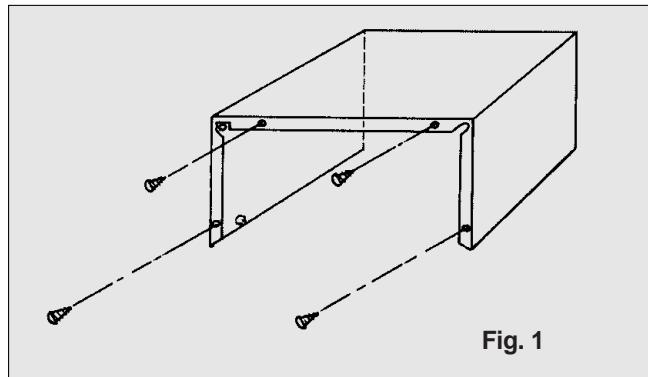
CAUTION : Service personnel should remove their watches whenever working close to or repairing the magnetron.

WARNING : When servicing the appliance, take care of touching or replacing high potential parts because of electrical shock or exposing microwave. These parts are as follows - H.V. Transformer, magnetron, H.V. Diode, H.V. Capacitor.

DISASSEMBLY AND ASSEMBLY

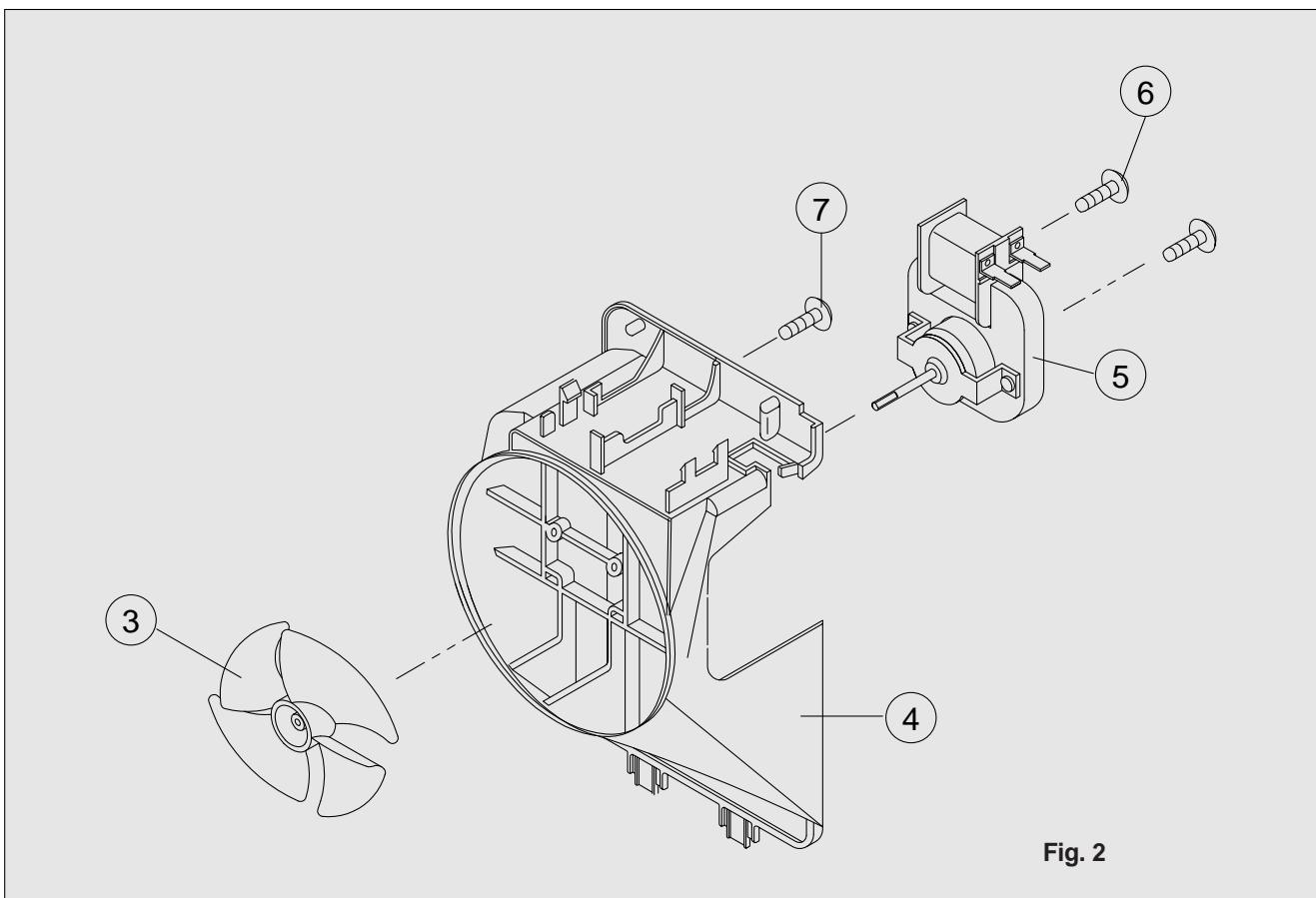
1. To remove cabinet. (Refer to Fig. 1)

- 1) Remove four screws on cabinet back.
- 2) Push the cabinet backward.



2. To remove guide wind assembly. (Refer to Fig. 2)

- 1) Remove the screw ① , guide wind ②
- 2) Pull the fan ③ off to the motor shaft.
- 3) Release two screws ④ which secure the motor shaded pole ⑤ .
- 4) Reverse the above steps for reassembly.



3. To remove H.V. transformer. (Refer to Fig. 3)

- 1) Remove four screws ① which secure the H.V. Transformer bracket to the base plate.
- 2) Remove the H.V. Transformer ②.

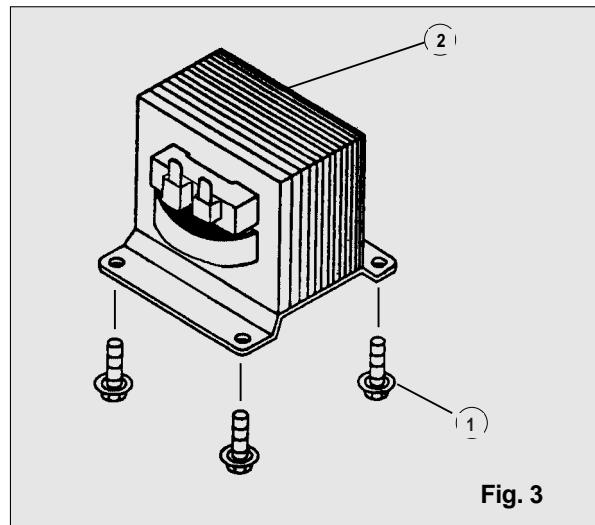
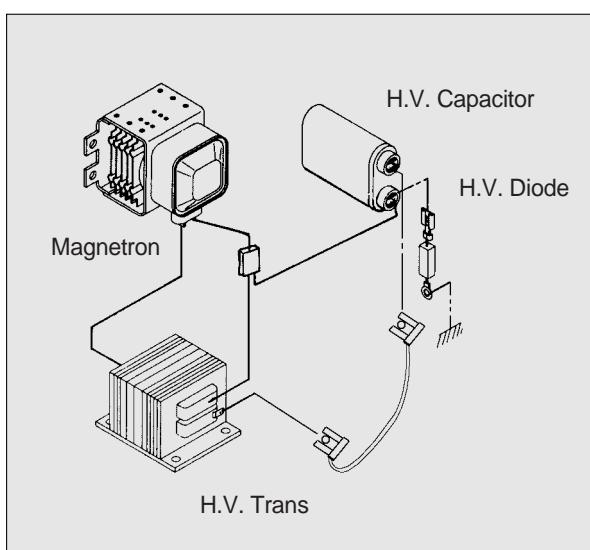


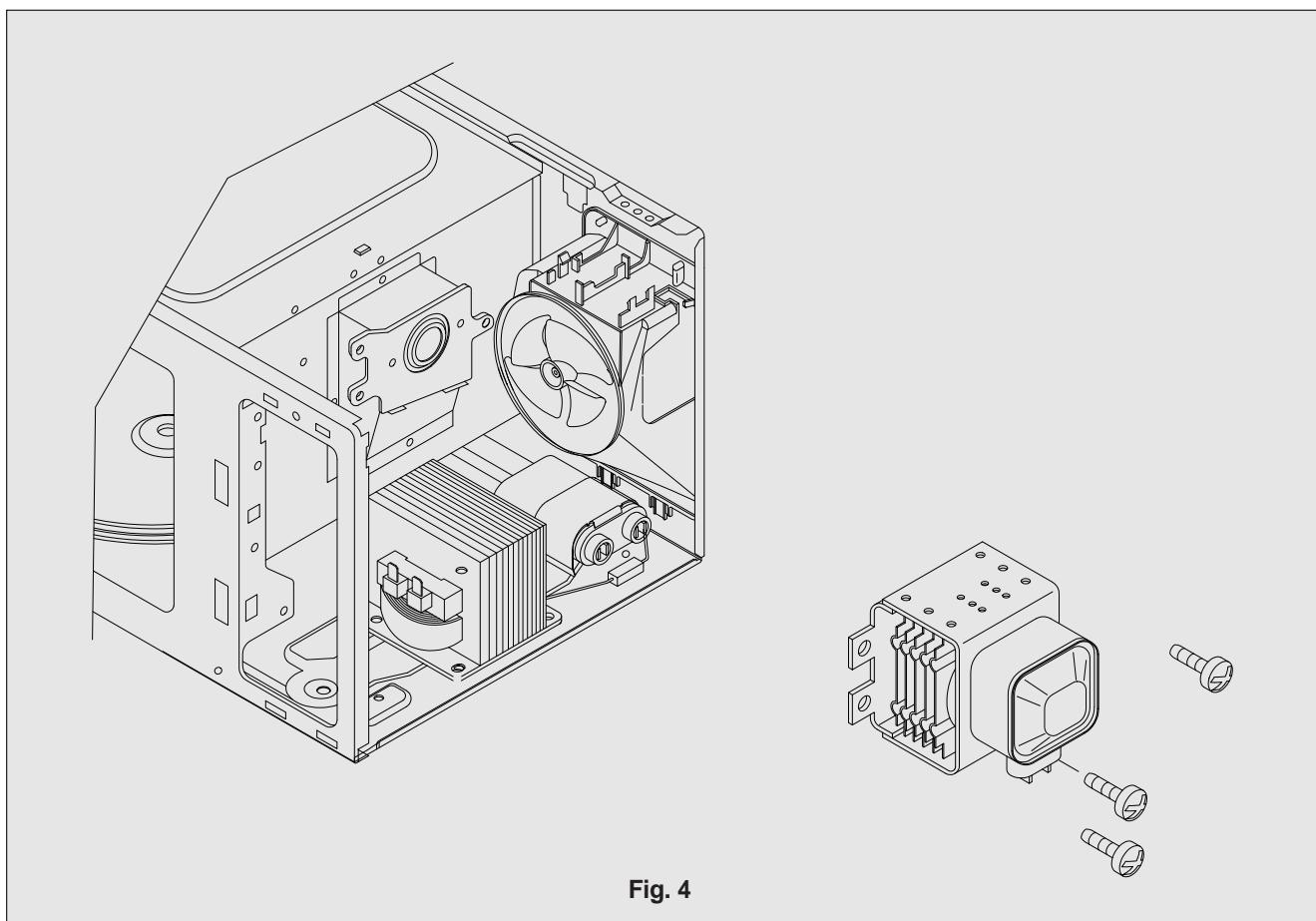
Fig. 3

High voltage circuit wiring

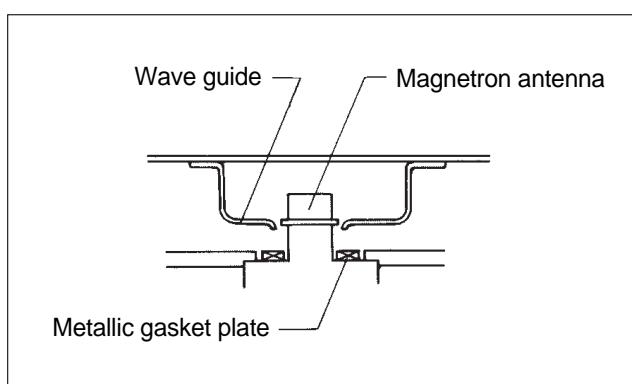
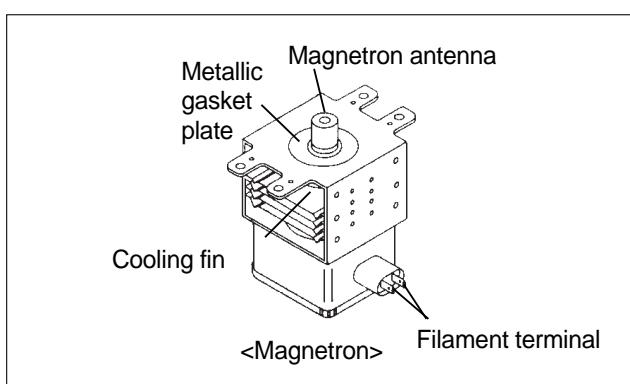


4. To remove magnetron. (Refer to Fig. 4)

- 1) Remove three screws which secure the magnetron.
- 2) Remove the magnetron.
- 3) Reverse the above steps for reassembly.

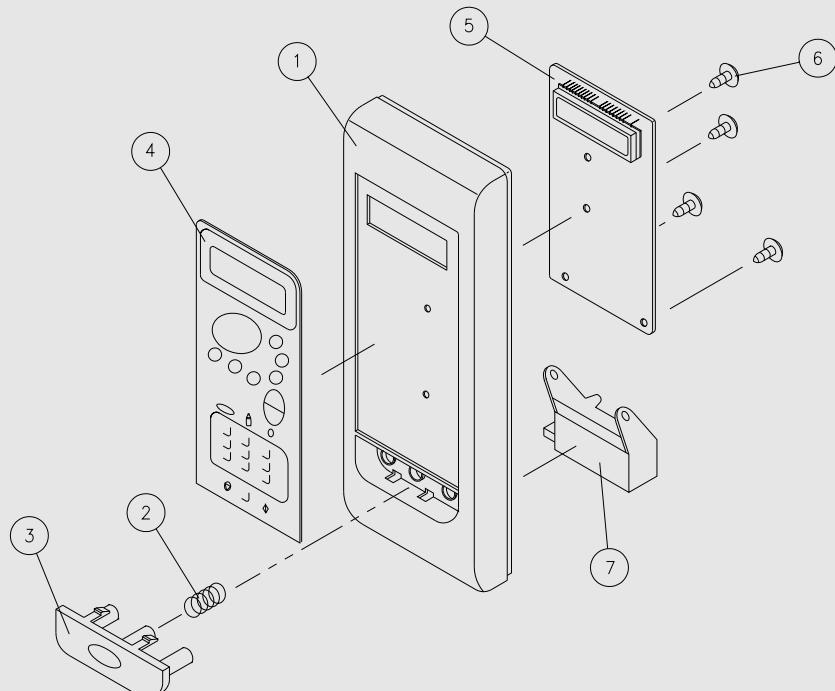
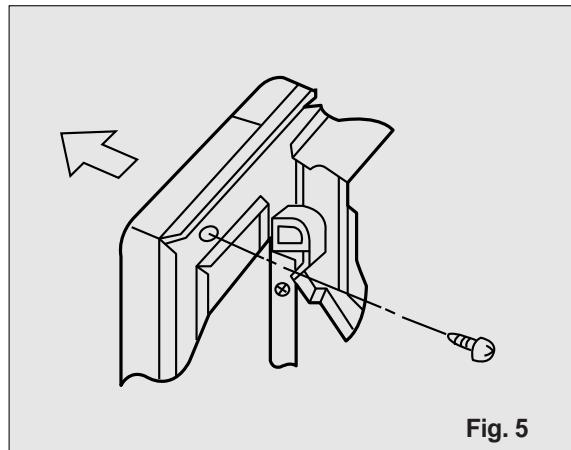


CAUTION : Never install the magnetron without the metallic gasket plate which is packed with each magnetron to prevent microwave leakage. Whenever repair work is carried out on magnetron, check the microwave leakage. It shall not exceed 4mW/cm^2 for a fully assembled oven with door normally closed.



5. To remove control panel assembly. (Refer to Fig. 5, 6)

- (1) Remove a screw holding control panel assembly to the oven front plate.
At the same time, draw forward the control panel assembly from oven front plate.
- (2) Remove three screws which secure the PCB main assembly to control panel .
- (3) Disconnect membrane tail from the connector of the PCB main assembly.
- (4) Detach membrane from the control panel.



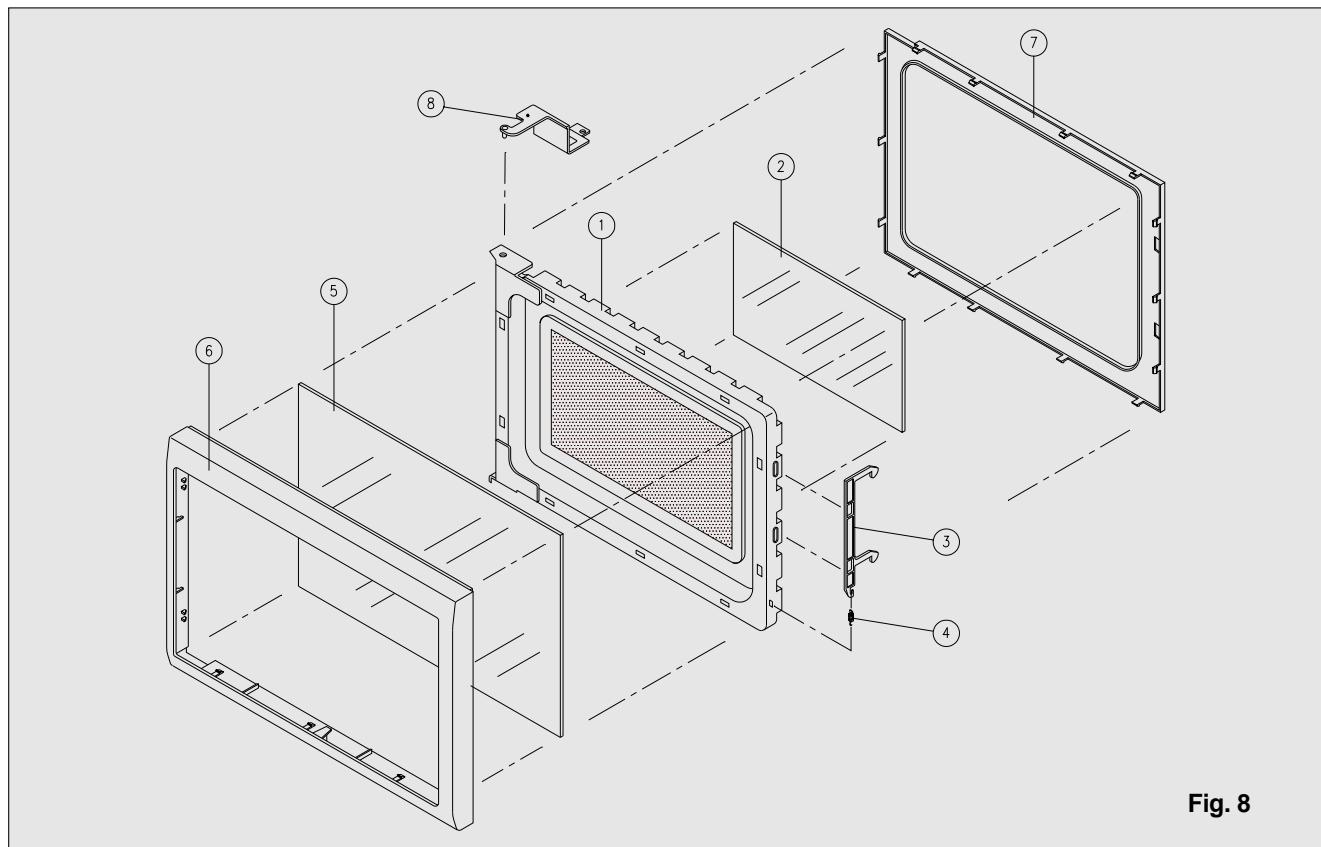
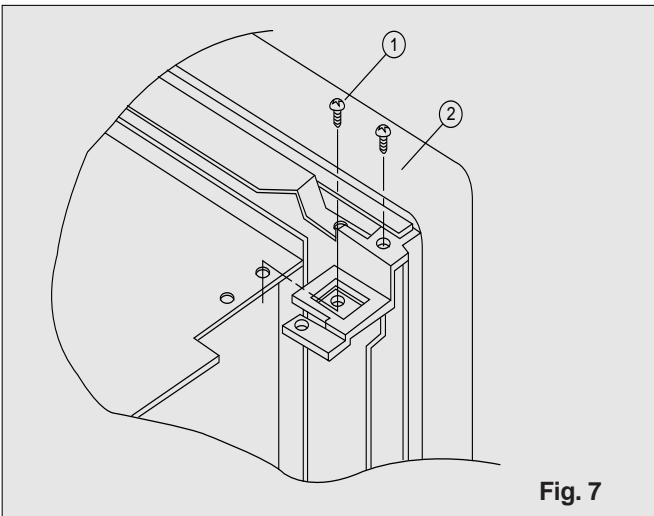
REF NO.	PART CODE	PART NAME	DESCRIPTION	Q'TY	REMARK
1	3516715100	CONTROL-PANEL	ABS	1	
2	441G430171	SPRING BUTTON	SWP DIA. 0.7	1	
3	3516905010	BUTTON DOOR OPEN	ABS	1	
4	3518520500	SWITCH MEMBRANE	KOR-971M0S	1	
	3518520510		KOR-971Q0S		
5	PKMPMSMX00	PCB MAIN MANUAL AS	KOR-971M0A	1	
6	7122401211	SCREW TAPPING	T2S TRS 4X12 MFZN	4	
7	3513702300	LEVER DOOR OPEN	POM	1	

6. To remove door assembly. (Refer to Fig. 7)

- 1) Remove two screws which secure to hinge.
- 2) Remove door assembly .
- 3) Remove door above for reassembly taking case to replace fixing glue.

7. To remove door part. (Refer to Fig. 8)

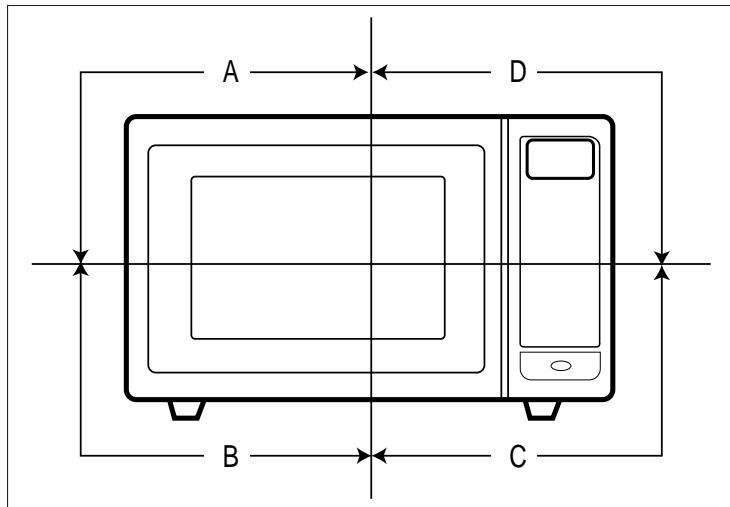
- (1) Remove the frame door  and barrier-screen .
- (2) Remove the Absorber micro .
- (3) Pull the hook .
- (4) Remove the spring .



REF NO.	PART CODE	PART NAME	DESCRIPTION	Q'TY	REMARK
1	3511708510	DOOR PAINTING AS	KOR-973KS	1	
2	3517003910	BARRIER-SCREEN *I	PET T0.1	1	
3	3513100900	HOOK	POM	1	
4	3515101300	SPRING HOOK	SWPA	1	
5	3517004000	BARRIER-SCREEN *O	TEMPERED GLASS 3.2T	1	
6	3512203310	FRAME DOOR	ABS	1	
7	3512300810	GASKET DOOR	PP G/F 30%	1	
8	3515203200	STOPPER HINGE *T	SCP-1 T2.5	1	

8. Method to reduce the gap between the door seal and the oven front surface.

- (1) To reduce gap located on part 'A'.
 - 1) Remove the cabinet.
 - 2) Loosen a screw on top door hinge, then push the door to contact the door seal to oven front surface.
 - 3) Tighten a screw.



- (2) To reduce gap located on part 'B'.
 - 1) Loosen a screw on bottom hinge, then push the door to contact the door seal to oven front surface.
 - 2) Tighten a screw.
- (3) To reduce gap located on part 'C'.
 - 1) Remove the cabinet.
 - 2) Loosen a screw on interlock switch assembly located bottom of oven body.
 - 3) Draw the interlock switch assembly inward as possible to engage with hook on the door bottom.
 - 4) Tighten a screw.
- (4) To reduce gap located on part 'D'.
 - 1) Remove the cabinet.
 - 2) Loosen a screw on interlock switch assembly located top of oven body.
 - 3) and 4) are same as step (3).

NOTE : Small gap may be acceptable if the microwave leakage does not exceed 1mW/cm^2 .

NOTE : The door on a microwave oven is designed to act as an electronic seal preventing the leakage of microwave energy from the oven cavity during the cook cycle. This function does not require that the door be air-tight, moisture (condensation) - Tight or light-tight. Therefore, the occasional appearance of moisture, light or the sensing of gentle warm air movement around the oven door is not abnormal and do not of themselves, indicate a leakage of microwave energy from the oven cavity. If such were the case, your oven could not be equipped with a vent, the very purpose of which is to exhaust the vapor-laden air from the oven cavity.

9. To remove tray motor and under Heater. (Refer to Fig. 9)

- 1) Cut the tray motor cover parts from the base plate (Refer to Fig. 9).
- 2) Remove two screws which secure the tray motor .

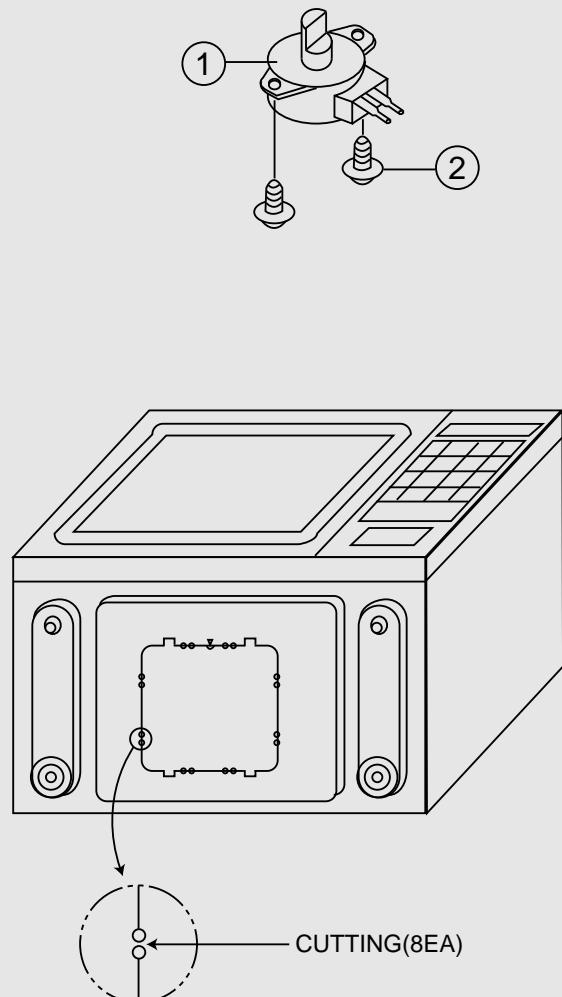


Fig. 9

TROUBLE SHOOTING GUIDE

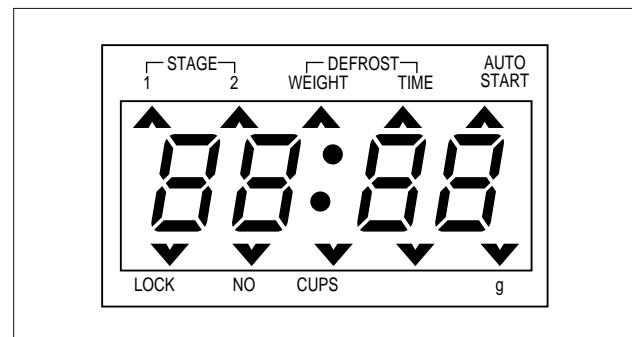
Following the procedures below to check if the oven is defective or not.

1. Check grounding before checking trouble.
2. Be careful of the high voltage circuit.
3. Discharge the high voltage capacitor.
4. When checking the continuity of switches or of the high voltage transformer, disconnect one lead wire from these parts and then check continuity with the AC plug removed. To do otherwise may result in false reading or damage to your meter.
5. Do not touch any part of the circuitry on the touch control circuit since static electric discharge may damage this control panel.
Always touch yourself to ground while working on this panel to discharge any static charge built up in your body.

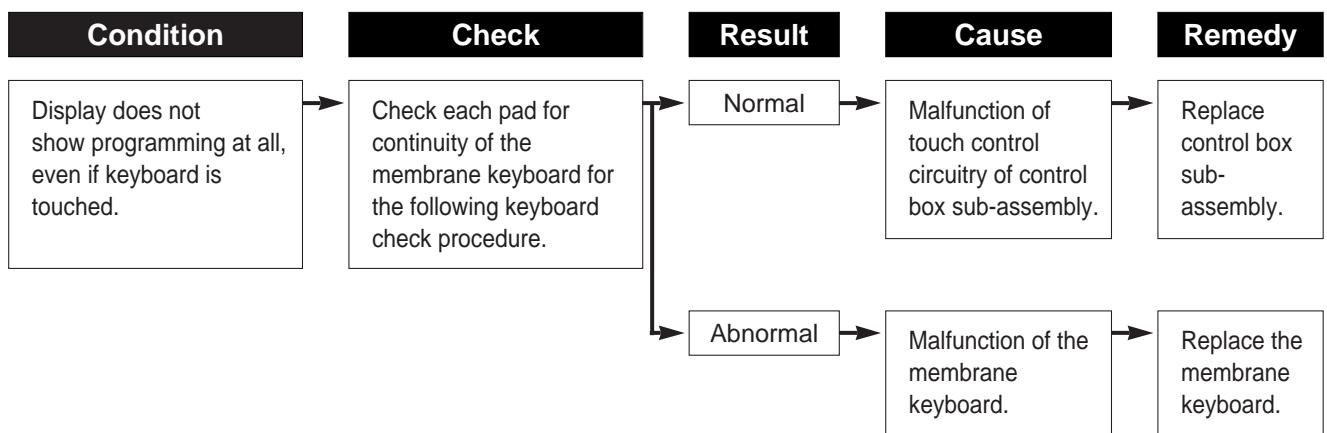
First of all operate the microwave oven following the correct operation described on pages 9~33 by time cooking, in order to find the exact cause of any trouble.

(TROUBLE 1) The following visual conditions indicate a probable defective touch control circuit or membrane switch assembly.

1. Incomplete segments.
 - (A) Segments missing.
 - (B) Partical segments missing.
 - (C) Digit flickering other than normal fluorescent slight flickering.
 - (D) “ :0” does not display when power is on.
2. A distinct change in the brightness of one or more numbers in the display.
3. One or more digits in the display are not on when they should be.
4. Display indicates a number different from one touched.
5. For example, touch 5 and 3 appears in the display.
6. Specific numbers (for example 5 and 3) will not display when the panel is touched.
7. Display does not count down or up with time cooking or clock operation.
8. Oven is programmable and cooks normally but no display shows.
9. Display obviously jumps in time while counting down.
10. Display counts down noticeably too fast while cooking.
11. Display can not shift from the first stage cooking to the third stage cooking while 3 phase cooking (including defrost).
12. Display does not show the time of day when dear pad is touched (in clock mode).
13. Oven lamp and fan motor and turntable motor do not stop although cooking is finished.
Check if the RELAY “2” contacts close if they are close, replace touch control circuit.



(TROUBLE 2) Digital readout display does not show programming, even if the membrane keyboard is programmed by touching proper pads.



NOTE : Before following the particular steps listed above in the trouble shooting guide for the membrane keyboard failure, please check for the continuity of each wire-harness between the membrane keyboard and control box assembly.

MEMBRANE KEYBOARD CHECK PROCEDURE

1. Check the pad termination and PCB Connector order. (KOR-971M, KOR-971Q)

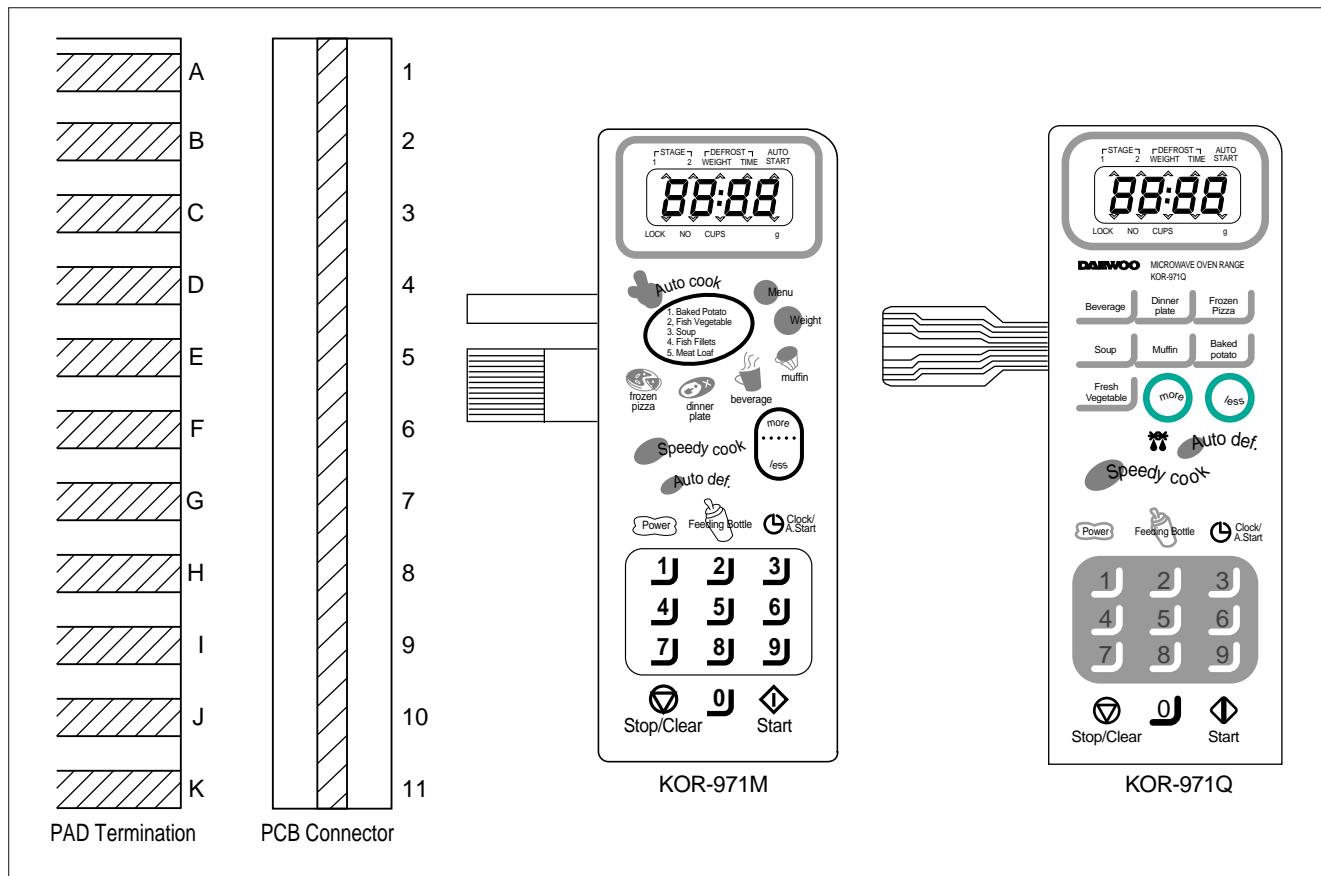


Fig. 10

2. Type of encoding and pad names. (KOR-971M)

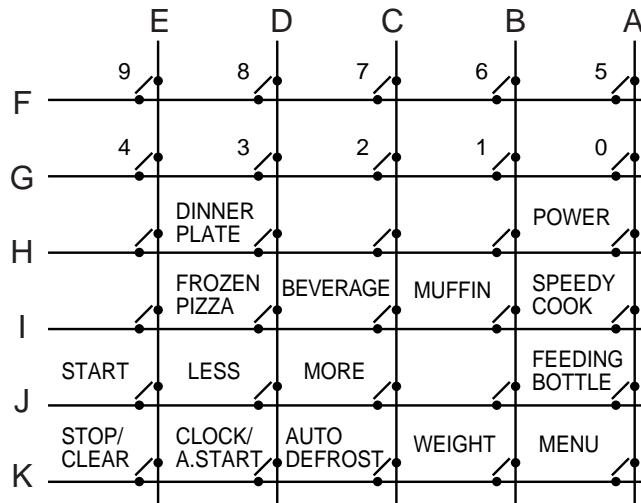


Fig. 11 Key Matrix

The membrane keyboard consists of 25 keys whose configurations are described above and provide 11 pad terminations to be connected to the touch control circuit as Fig. 11.

Key check procedure

To determine if the membrane keyboard is defective or not, check the continuity of each pad (KEY) contacts with a multimeter.

1) 5	pad : Between S and F	14) MORE	pad : Between C and J
2) 0	pad : Between A and G	15) AUTO DEFROST	pad : Between C and K
3) POWER	pad : Between A and H	16) 8	pad : Between D and F
4) SPEEDY COOK	pad : Between A and I	17) 3	pad : Between D and G
5) FEEDING BOTTLE	pad : Between A and J	18) DINNER PLATE	pad : Between D and H
6) MENU	pad : Between A and K	19) FROZEN PIZZA	pad : Between D and I
7) 6	pad : Between B and F	20) LESS	pad : Between D and J
8) 1	pad : Between B and G	21) CLOCK/A.START	pad : Between D and K
9) MUFFIN	pad : Between B and I	22) 9	pad : Between E and F
10) WEIGHT	pad : Between B and K	23) 4	pad : Between E and G
11) 7	pad : Between C and F	24) START	pad : Between E and J
12) 2	pad : Between C and G	25) STOP/CLEAR	pad : Between E and K
13) BEVERAGE	pad : Between C and I		

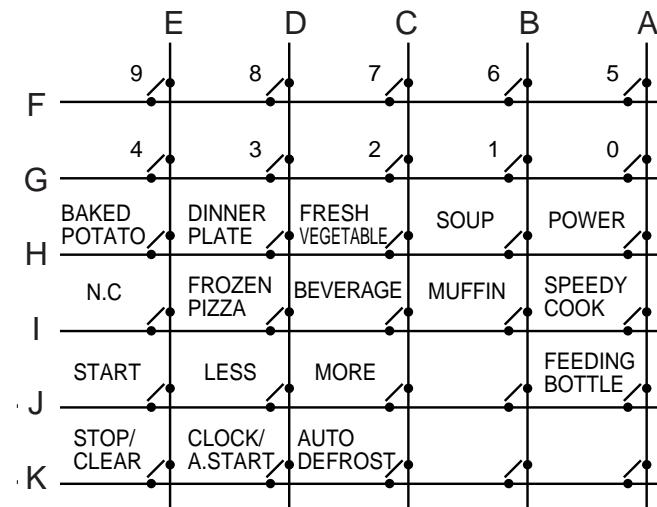


Fig. 11 Key Matrix

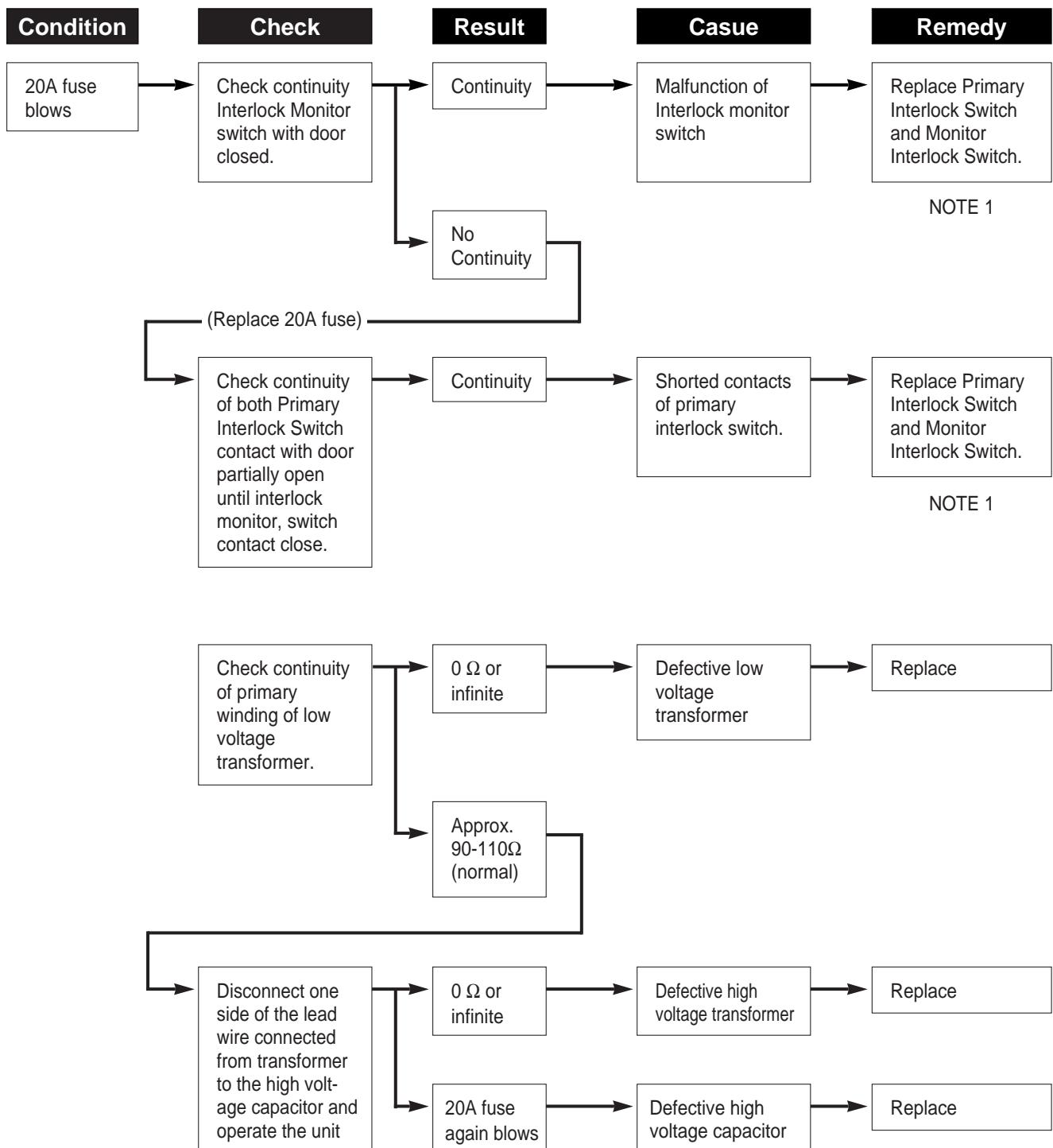
The membrane keyboard consists of 26 keys whose configurations are described above and provide 11 pad terminations to be connected to the touch control circuit as Fig. 11.

Key check procedure

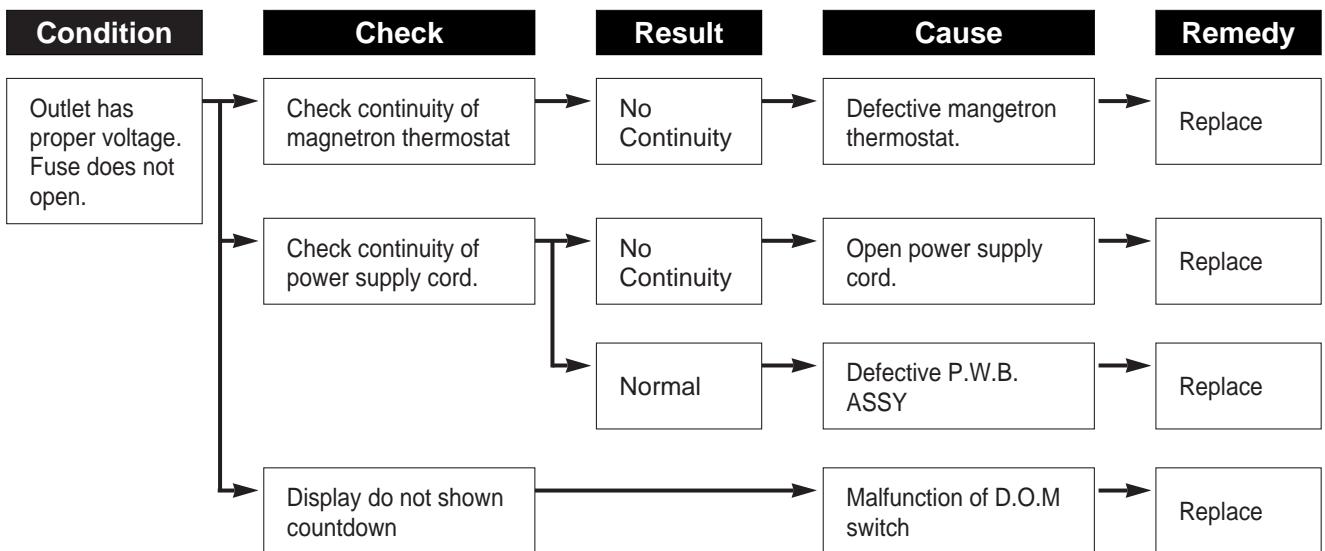
To determine if the membrane keyboard is defective or not, check the continuity of each pad (KEY) contacts with a multimeter.

1) 5	pad : Between A and F	14) MORE	pad : Between C and J
2) 0	pad : Between A and G	15) AUTO DEFROST	pad : Between C and K
3) POWER	pad : Between A and H	16) 8	pad : Between D and F
4) SPEEDY COOK	pad : Between A and I	17) 3	pad : Between D and G
5) FEEDING BOTTLE	pad : Between A and J	18) DINNER PLATE	pad : Between D and H
6) 6	pad : Between B and F	19) FROZEN PIZZA	pad : Between D and I
7) 1	pad : Between B and G	20) LESS	pad : Between D and J
8) SOUP	pad : Between B and H	21) CLOCK/A.START	pad : Between D and K
9) MUFFIN	pad : Between B and I	22) 9	pad : Between E and F
10) 7	pad : Between C and F	23) 4	pad : Between E and G
11) 2	pad : Between C and G	24) BAKED POTATO	pad : Between E and H
12) FRESH VEGETABLE	pad : Between C and H	25) START	pad : Between E and J
13) BEVERAGE	pad : Between C and I	26) STOP/CLEAR	pad : Between E and K

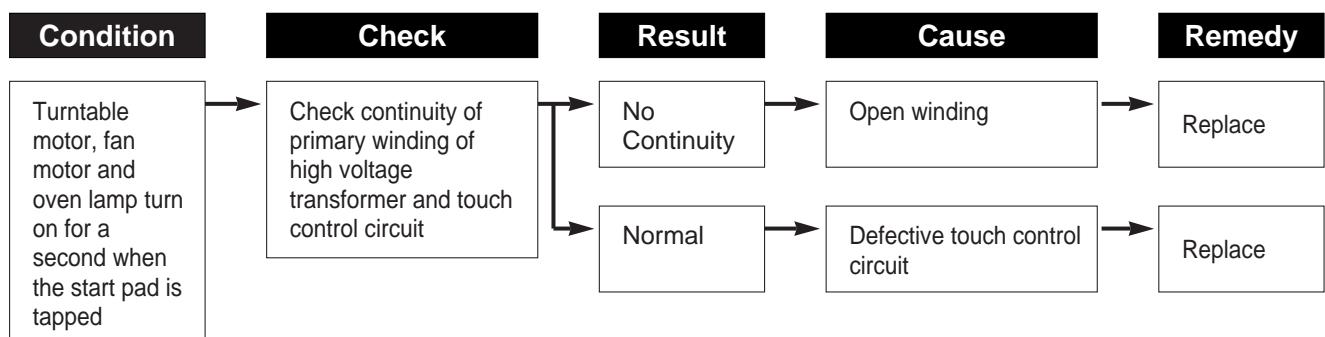
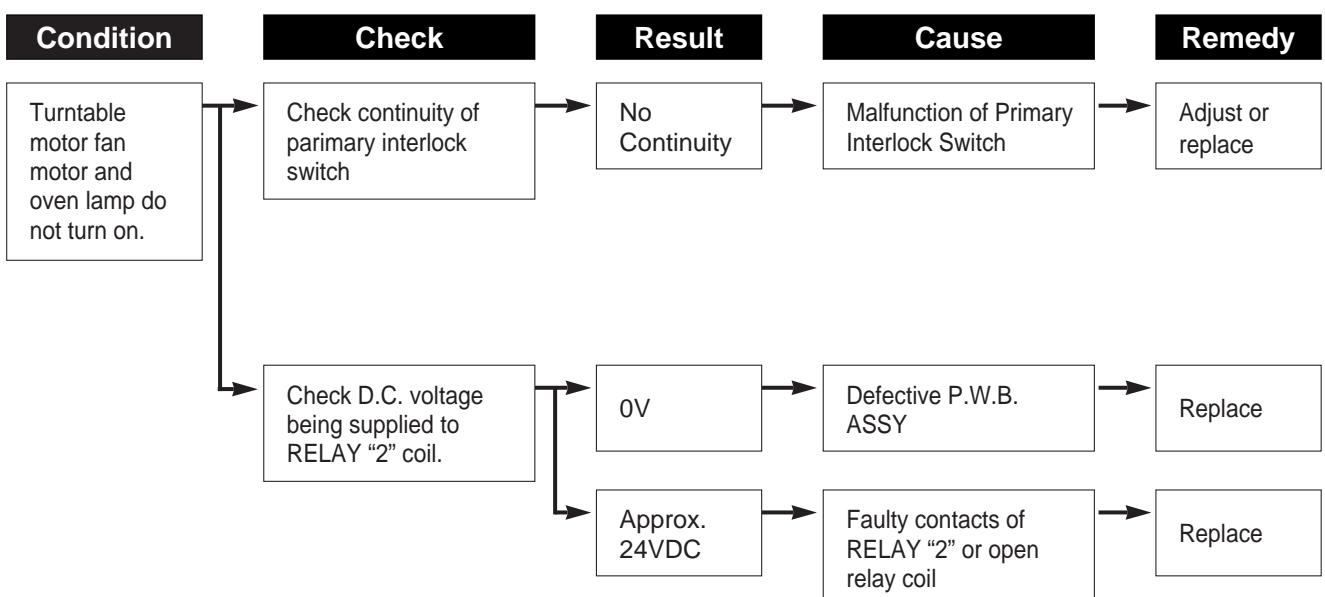
(TROUBLE 3) Oven does not operate at all; Display window does not display any figures and any inputs can not be accepted.



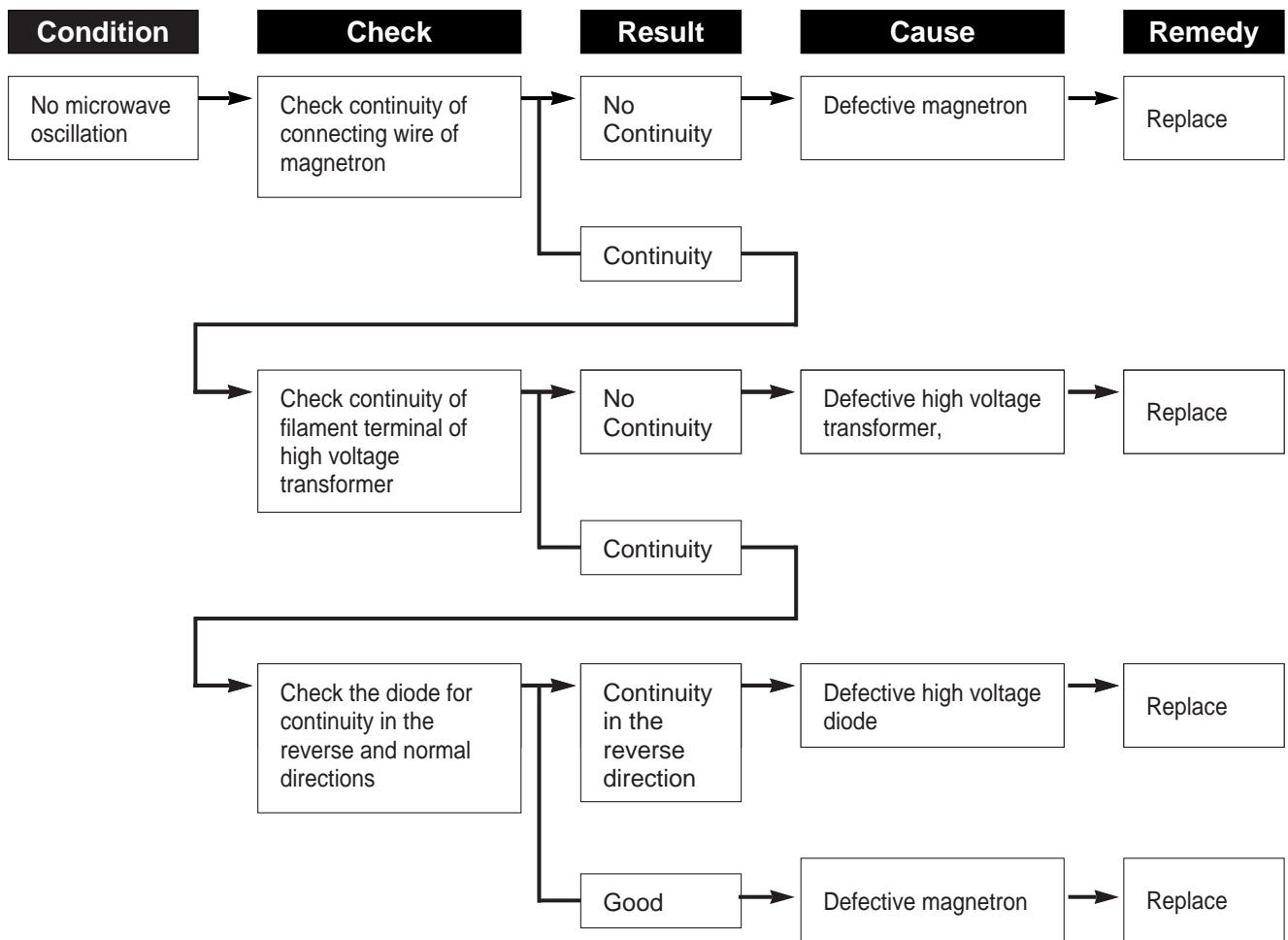
NOTE1 : All these switches must be replaced at the same time, please refer to page 34 and 35 for adjustment instructions.



(TROUBLE 4) Display shows all figures selected, but oven does not start cooking, even though desired program and time are set and start pad is tapped.

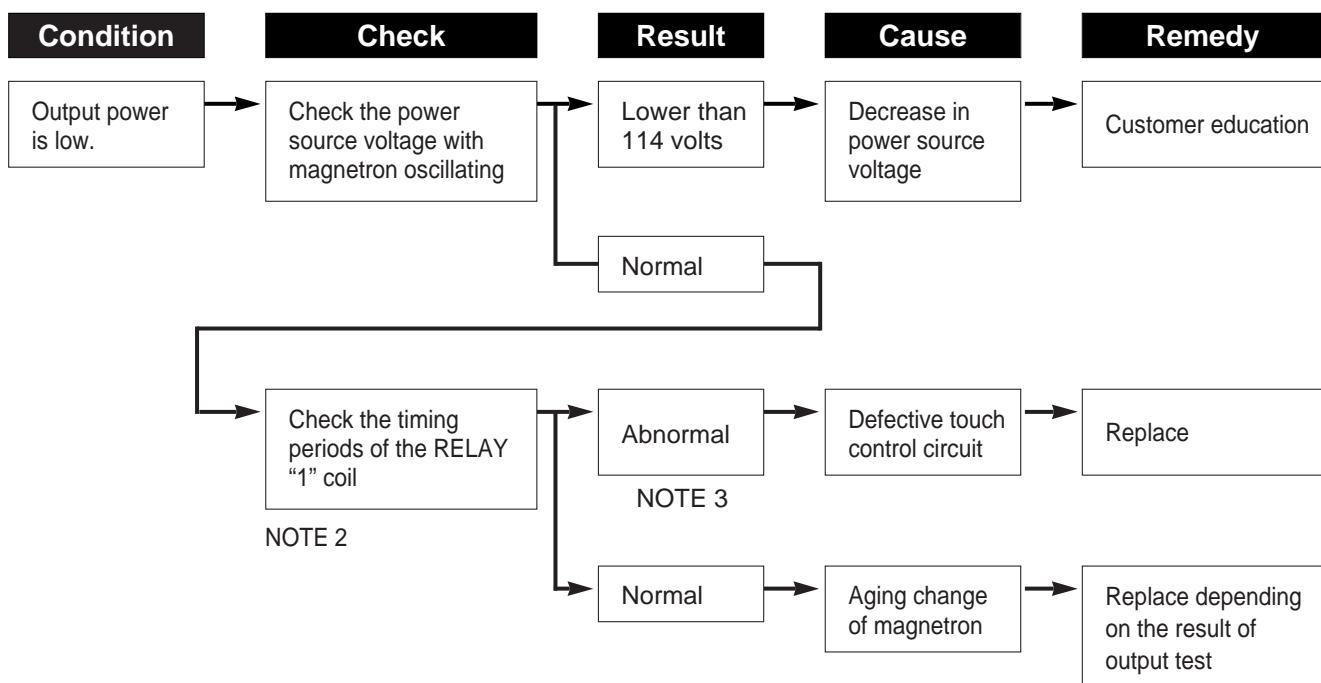


(TROUBLE 5) No microwave oscillation even though fan motor rotates.



(TROUBLE 6) Microwave Output power is low.

First of all, check if output power is really low following "measurement of the microwave output power".



NOTE2 : The following chart shows the timing periods of the RELAY "1".

POWER	RELAY "1" ON TIME	RELAY "1" OFF TIME
0	0 (Seconds)	29 (Seconds)
1	3	26
2	5	24
3	8	21
4	11	18
5	14	15
6	17	12
7	20	9
8	23	6
9	26	3
HI	29	0

NOTE3 : Interlock monitor switch must be replaced when fuse is blown out.

MEASUREMENT

1. Microwave Output Power

1-1. Standard Method

Microwave output power can be checked by indirectly measuring the temperature rise of a certain amount of water exposed to the microwave as directed below.

- 1) Microwave power output measurement is made with the microwave oven supplied at rated voltage and operated at its maximum microwave power setting with a load of 1,000 ; 5cc of potable water.
- 2) The water is contained in a cylindrical borosilicate glass vessel having a maximum material thickness of 3 mm and an outside diameter of approximately 190 mm.
- 3) The oven and the empty vessel are at ambient temperature prior to the start of the test.
The initial temperature prior to the start of the test.
The initial temperature of the water is 10 ; 2 ; (50 ; 3.6)
It is measured immediately before the water is added to the vessel. After addition of the water to the vessel, the load is immediately placed on the center of the shelf which is in the lowest normal position. (fig. 12).
- 4) Microwave power is switched on.
- 5) Heating time should be exactly 44 seconds.
Heating time is measured while the microwave generator is operating at full power.
- 6) The initial and final water temperatures are selected so that the maximum difference between the ambient and final water temperatures is 5K.
- 7) The microwave power output P in watts is calculated from the following formula :

$$P=4187 \cdot T/t$$

i T is actual temperature rise.

i t is the heating time.

The power measured should be 950W ; 10%

CAUTION :

1. Water load should be measured exactly to 1 liter.
2. Input power voltage should be exactly volts as specified.
3. Ambient temperature should be 20 ; 2 ; (68 ; 3.6)

2. Electrical Continuity Check of Interlock Switch

2-1. Procedure

NOTE : Remove the power plug from the wall receptacle before testing.

1) Primary Interlock Switch

- 1) Disconnect two connector from Primary Interlock Switch.
- 2) Connect the ohm-meter leads between the terminals of the primary interlock switch.
- 3) Read the value of resistance between the terminals of the switch, when the door is opened, and when the switch, when the door is opened, and when the door is closed.

2) Secondary Interlock Switch

- 1) Disconnect two connector from secondary interlock switch.
- 2) Connect the ohm-meter leads between the terminals of the secondary interlock switch.
- 3) Read the value of resistance between the terminals of the switch, when the door is opened, and when the oven door is closed.

3) Interlock Monitor Switch

- 1) Disconnect the lead wire connecting the primary interlock switch and interlock monitor switch from primary interlock switch terminal.
- 2) Connect the ohm-meter leads between the lead wire connector disconnected as item '1' and the power supply natural plug pin.
- 3) Read the value of resistance between the lead wire connector and the power supply natural plug pin, when the oven door is opened, and when the oven door is closed.

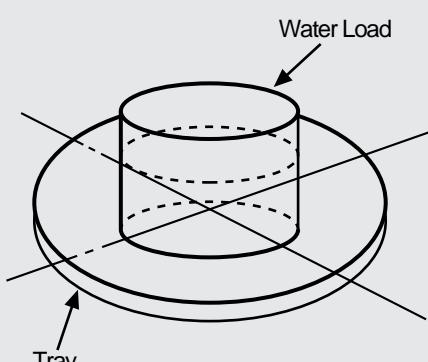


Fig. 12

2-2. Judgement

The value of resistance should be applied to the value specified below.

Door	Open	Closed
Primary Interlock Switch		0
Secondary Interlock Switch		0
Interlock Monitor Circuit	0	

3. Microwave Leakage Test

3-1. Warning

- 1) DO NOT place your hands into any suspected microwave leakage field unless the safe density level is known.
- 2) Always start measuring of an unknown field to assure safety for operating personnel from microwave energy.
- 3) Slowly approach the unit under test until the radiometer reads appreciable leakage from the unit under test.
- 4) Care should be taken not to place the eyes in direct line with the source of microwave energy.

3-2. Method

The power density of the microwave leakage emitted by the microwave oven should not exceed 1mW/cm² at any point 50mm (2 in). or more away from the external surface of the oven as measured prior to acquisition by a purchaser and there after once the oven is in use, 4mW/cm² at any point 50mm (2 in) or more away from the external surface of the oven, checks to be made around the whole of the door seal and on each of the main unit surface.

Measurements should be made with the oven operating at its maximum output and containing a load of 275 ; 15 milliliters of tap water initially at 68 ; 9 °C (20 ; 5 °C) placed within the cavity at the center of the load carrying surface provided by the manufacturer. The water container should be a low form 600 milli-liters beaker having an inside diameter of approximately 85mm (3-11/32 in.) and made of an electrically nonconductive material such as glass or plastic.

3-3. Procedures

- 1) Prepare 600cc glass or plastic container.
- 2) Pour 275 ; 15 milliliters of tap water initially at 68 ; 9 °C (20 ; 5 °C) in the container.
- 3) Place it at the center of the tray and set it in a cavity.
- 4) Operate oven.
- 5) Measure the microwave leakage using a Narda 8100 or similarly approved microwave leakage meter after a few minutes operation.

NOTE : The scan rate should not exceed 1 inch/sec.

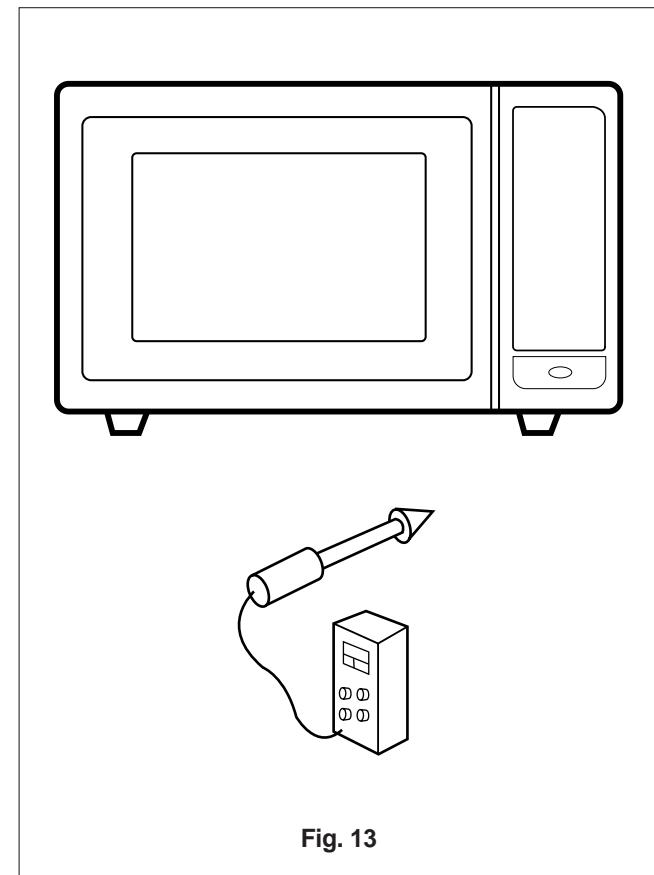


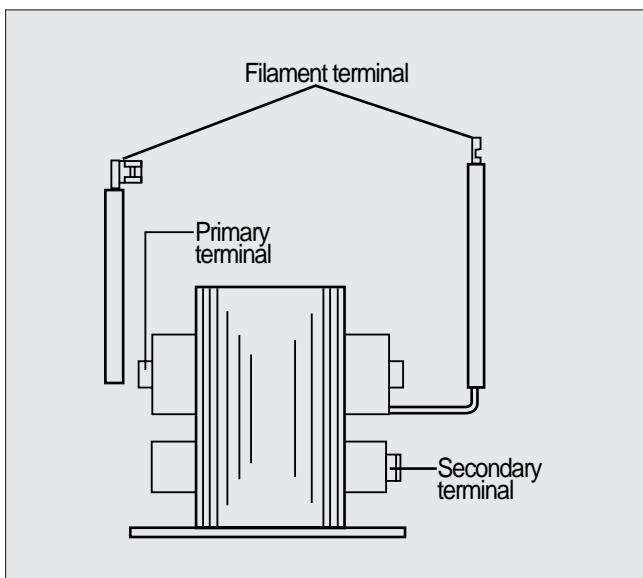
Fig. 13

COMPONENT TEST PROCEDURE

1. High voltage is present at the high voltage terminal of the high voltage transformer during any cook cycle.
2. It is neither necessary nor advisable to attempt measurement of the high voltage.
3. Before touching any oven components or wiring, always unplug the oven from its power source and discharge the capacitor (see page 36).

1. High voltage transformer

- (A) Remove connections from the transformer terminals and check continuity.
(B) Normal readings should be as follows:
- | | |
|-------------------|------------------------------|
| Secondary winding | Approx. $100\Omega \pm 10\%$ |
| Filament winding | Approx. 0Ω |
| Primary winding | Approx. 0Ω |



2. High voltage capacitor

- Check continuity of capacitor with meter on the highest ohm scale.
- A normal capacitor will show continuity for a short time, and then indicate $9M\Omega$ once the capacitor is charged.
- A shorted capacitor will show continuous continuity.
- An open capacitor will show constant $9M\Omega$.
- Resistance between each terminal and chassis should be infinite.

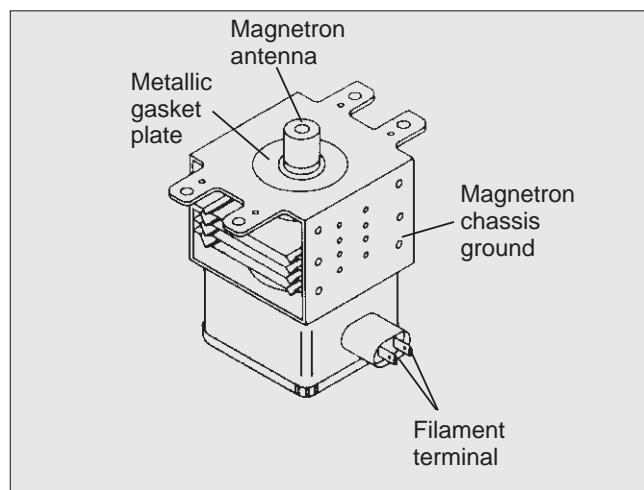
3. High voltage diode

The high voltage diode is located on the base near the transformer.

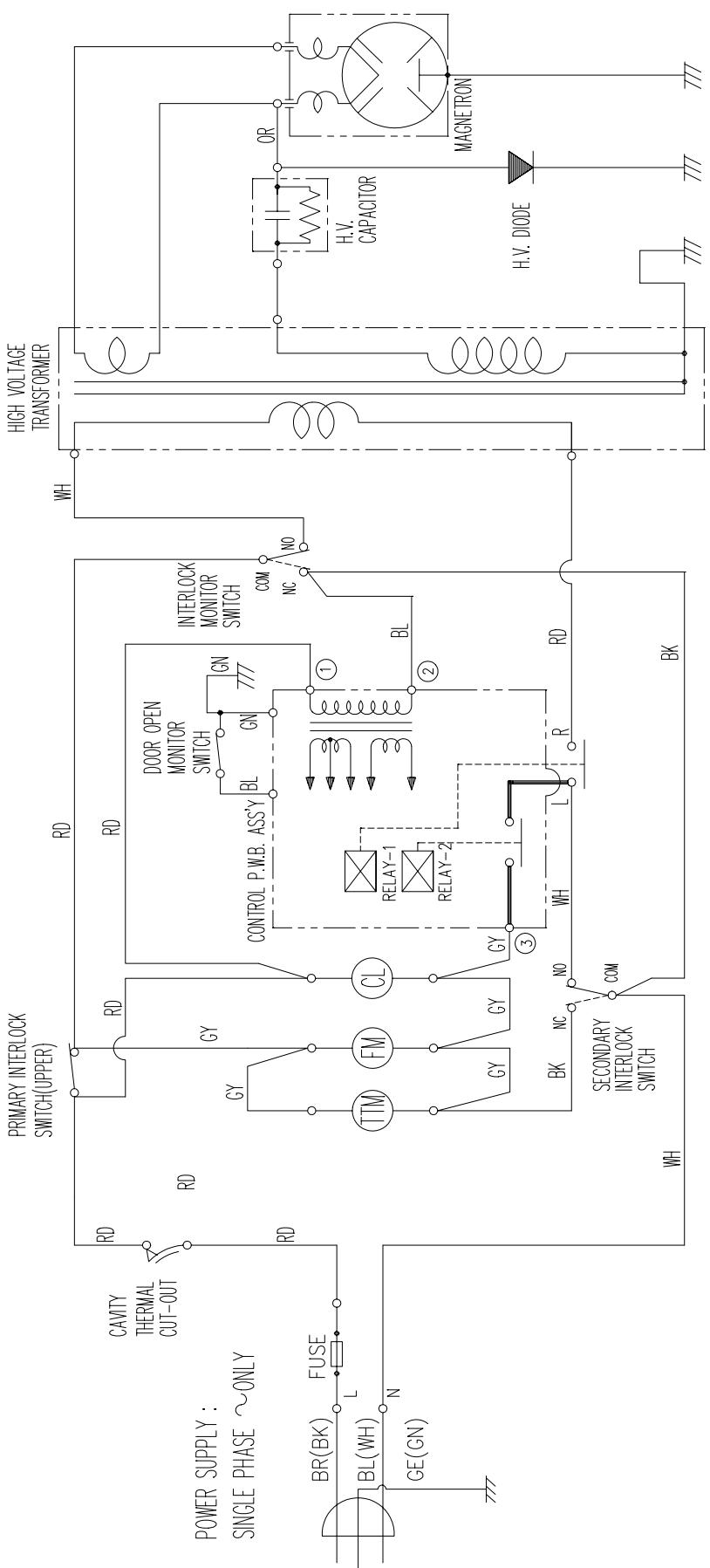
- Isolate the diode from the circuit by disconnecting the leads.
- With the ohmmeter set on the highest resistance scale, measure the resistance across the diode terminals. Reverse the meter leads and again observe the resistance reading. Meter with 6V, 9V or higher voltage batteries should be used to check the front-to-back resistance may be read in both directions. A normal diodes resistance will be infinite in one direction and several hundred $K\Omega$ in the other direction.

4. Magnetron

- For complete magnetron diagnosis, refer to "Measurement of the Microwave Output Power". Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose for an open filament or shorted magnetron.
- Isolate magnetron from the circuit by disconnecting the leads.
 - A continuity check across magnetron filament terminals should indicate one ohm or less.
 - A continuity check between each filament terminal and magnetron case should read open.

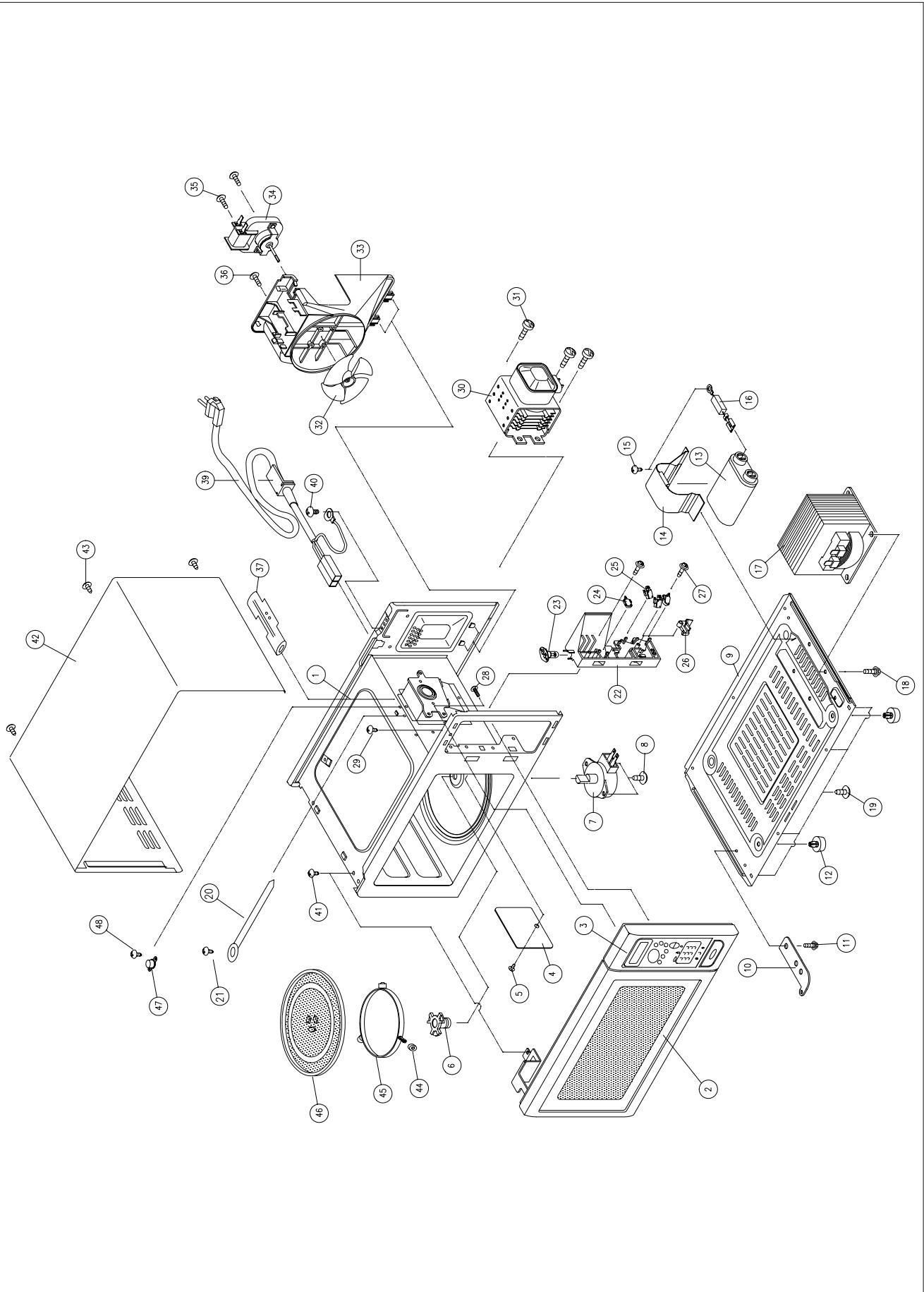


WIRING DIAGRAM



NOTE : RD : RED	OR : ORANGE	CL : CAVITY LAMP
WH : WHITE	BL : BLUE	FM : FAN(BLOWER) MOTOR
BK : BLACK	GY : GRAY	TTM : TURN TABLE MOTOR
GN : GREEN	GE : GREEN/YELLOW	
BR : BROWN		

EXPLODED VIEWS AND PARTS LIST



NO	PART NAME	DESCRIPTION	PART CODE	Q'TY
1	CAVITY WELD AS	KOR-971M0S	3516107940	1
2	DOOR AS	KOR-971M0S	3511708360	1
3	CONTROL-PANEL AS	KOR-971M0A	PKCPSWMX00	1
		KOR-971Q0A	PKCPSWM600	
4	COVER WAVE GUIDE	MICA T0.5	3511403800	1
5	SCREW TAPPING	T1 BIN 4X8 MFNI	7113400814	1
6	COUPLER	PPS	3517400600	1
7	MOTOR SYNCRO	220V 2.5W GM-16-24FD12	3966310100	1
8	SCREW TAPPING	T2S PAN 4X10 MFZN	7121400611	1
9	BASE	SBHG T0.8	3510310400	2
10	STOPPER HINGE *U AS	KOR-121M0A	3515202800	1
11	SCREW TAPTITE	TT3 TRS 4X8 MFZN	7272400811	1
12	FOOT	DASF-310	3512101400	2
13	CAPACITOR HV	2100VAC, 0.91μF	441P823010	1
14	HOLDER HV CAPACITOR	SECC T0.8	441X304112	1
15	SCREW TAPTITE	TT3 TRS 4X8 MFZN	7272400811	1
16	DIODE HV	SANKEN HVR-1X-32B(D5.3)	4416V24000	1
17	TRANS HV	JMOT-N95A0-97T	3518112000	1
18	SCREW SPECIAL	TT3 HEX FG 4X8 SE MFZN	3516003700	4
19	SCREW TAPPING	T1 TRS 4X10 MFZN	7112401011	7
20	CLAMP WIRE	SBHG	3511200400	1
21	SCREW TAPPING	T1 TRS 4X12 MFZN	7112401211	1
22	LOCK	POM	3513807600	1
23	LAMP	BL 240V 25W T25 C7A H187	3513601500	1
24	SW MICRO	VP-533A-0F APNO #187 200G	4415A17352	2
25	SW MICRO	VP-531A-0F (DAE SUNG)	4415A66910	2
26	LEVER LOCK	POM	3513701300	1
27	SCREW TAPPING	T2S TRS 4X12 MFZN	7122401211	2
28	SCREW TAPPING	T2S TRS 4X12 MFZN	7122401211	1
29	SCREW SPECIAL	TT2 TRS 4X8 SE MFZN	7S422X4081	1
30	MAGNETRON	2M218J(MF) I	3518002400	1
31	SCREW SPECIAL	T2S FLANGE 4X13 PW SE MFZN	3516002700	3
32	FAN	PP GF20	3511800100	1
33	GUIDE WIND	PP KOC-970	3512515300	1
34	MOTOR SHADED POLE	120V 23W OEM-15DWX1-A03	3963821400	1
35	SCREW TAPPING	T2S PAN 4X30 MFZN	7121403011	2
36	SCREW TAPPING	T2S TRS 4X12 MFZN	7122401211	1
37	FUSE	250V 20A		1
38				
39	CORD POWER AS	3X1.5 40X40 120-RTML	35113ACNJ5	1
40	SCREW TAPPING	T1 TRS 4X10 MFZN	7112401011	3
41	SCREW SPECIAL	TT3 FLG HEX 4X8 MFZN	3516003700	2
42	CABINET	PCM T0.5	3510801900	1
43	SCREW TAPPING	T1 TRS 4X10 MFZN	7S312X40A1	4
44	ROLLER	TEFLON D: 14.5	3514701510	3
45	GUIDE ROLLER	PPS	3512502300	1
46	TRAY	GLASS DIA: 325 1320G	441CD35011	1
47	THERMOSTAT	OFF:90 ON:60 H #187	3518902600	1
48	SCREW TAPPING	T2S PAN 3X6 MFZN	7121300611	1

PRINTED CIRCUIT BOARD

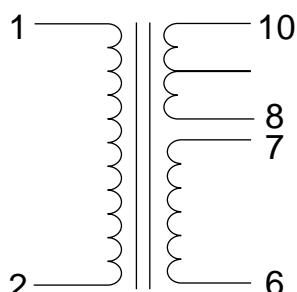
1. CIRCUIT CHECK PROCEDURE

1) Low Voltage Transformer (DMR-604P) Check.

The low voltage transformer is located on the P.C.B.

Measuring condition : Input voltage ; 120V

Frequency ; 60Hz



Voltage Terminal	LOAD	NO LOAD
6 - 7	24V	30V
8 - 10	2.4V	2.5V

NOTE 1 : Secondary side voltage of the low voltage transformer changes in proportion to fluctuation of power source voltage.

NOTE 2 : The allowable tolerance of the secondary voltage is within ± 5% of norminal voltage.

2) Voltage Check

KEY CHECK POINT

NO.	CHECK POINT	REMARK
1	IC1 PIN 6,10,11	-5VDC
2	IC1 PIN 1	-20VDC
3	IC1 PIN 22	0V----- -14V----- T----- T: 16.67 ms (60Hz)
4	IC1 PIN 8 or 9	0V----- - 5V----- T----- T:250nS
5	DP1 PIN 1 & 25	2.4VAC (DISPLAY FILAMENT VOLTAGE)

CHECK METHOD

NO.	MEASURE POINT (See Page 45.)	WAVEFORM	REMEDY	REMARK
1	MP 1	DC -5 ± 0.25V	Replace ZD2, EC1, EC2	NO LOAD
3	MP 2	DC -24 ± 1.0V	Replace R22, R25	NO LOAD
3	MP 3	DC -30 ± 1.0V	Replace R21, R22, EC5	NO LOAD

NOTE : Each measure point must be measured with GND points

3) Display problems

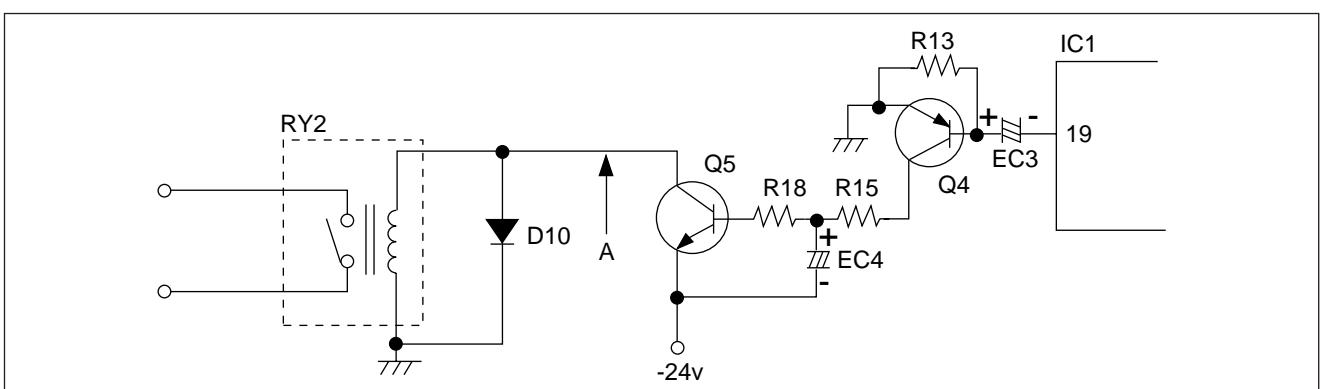
NO.	CAUSE	MEASUREMENT	RESULT	REMEDY
1	Poor contact between P.C.B. and display filament.	Check the voltage of PIN 1 & PIN 25.	2.4 VAC	Fix the PIN 1 & 25 on the P.C.B.
2	Defective Display	Refer to "The display trouble shooting data" below.		Replace P.C.B. assembly.
3	Loss of vacuum in the display	white spot 	White spot is generated on the display.	Replace P.C.B assembly.

DISPLAY TROUBLE SHOOTING DATA

TROUBLE	DISPLAY NAME & PIN NO.	MICOM OUTPUT IN PIN NO.
STAGE 1, LOCK don't come on.	GRID 1 (G1), 21	30
STAGE 2, NO don't come on.	GRID 1 (G2), 17	29
WEIGHT DEFROST, CUPS doesn't come on.	GRID 3 (G3), 9	26
TIME DEFROST, OZ don't come on.	GRID 4 (G4), 10	28
AUTO START, lb. don't come on.	GRID 5 (G5), 4, 7	27
SEGMENT "a" doesn't come on from G1 to G5.	SEGMENT d, 19	39
SEGMENT "b" doesn't come on from G1 to G5.	SEGMENT e, 18	40
SEGMENT "c" doesn't come on from G1 to G5.	SEGMENT f, 16	41
SEGMENT "d" doesn't come on from G1 to G5.	SEGMENT a, 23	36
SEGMENT "e" doesn't come on from G1 to G5.	SEGMENT b, 22	37
SEGMENT "f" doesn't come on from G1 to G5.	SEGMENT c, 20	38
SEGMENT "g" doesn't come on from G1 to G5.	SEGMENT g, 15	42
LOCK, NO, CUPS, g don't come on.	UPPER BAR h, 5	33
STAGE1, STAGE2, TIME DEFROST, WEIGHT DEFROST, AUTO START don't come on.	LOWER BAR i, 6, 8, 9, 11	34

4) When there is no microwave oscillation.

- (1) When touching START pad, oven lamp does not turn on.
Fan motor and truntable motor do not rotate, but cook indicator in display comes on.
* Cause : RELAY "2" does not operate.



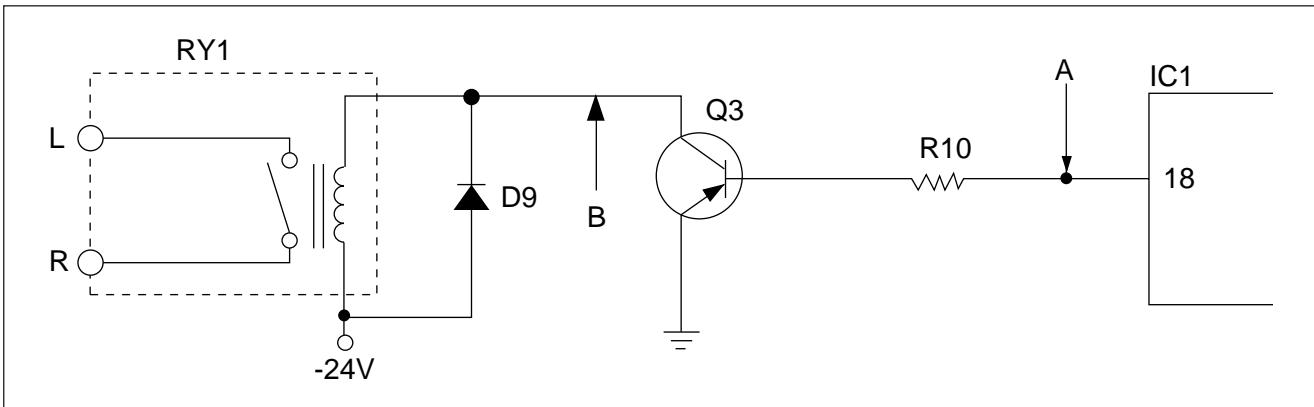
CHECK METHOD

POINT STAGE	A
RELAY "2" ON	-24VDC
RELAY "2" OFF	GND

(2) When touching “START” pad, oven lamp turns on.

Fan motor and turntable rotate and cook indicator in display comes on.

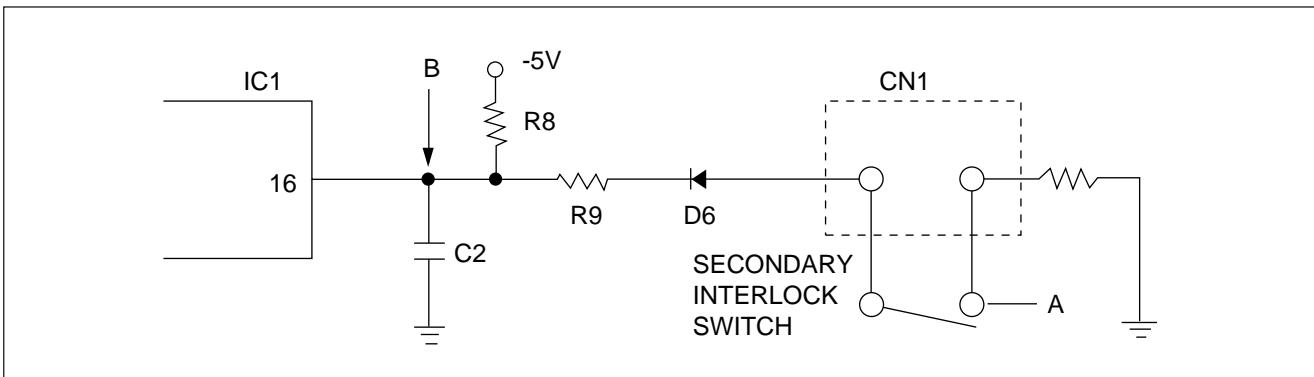
* Cause : RELAY "1" does not operate.



CHECK METHOD

POINT	A	B
STAGE		
RELAY "1" ON	-5VDC	GND
RELAY "1" OFF	GND	GND

5) When the door is opened during operation, the Count down time does not stop.

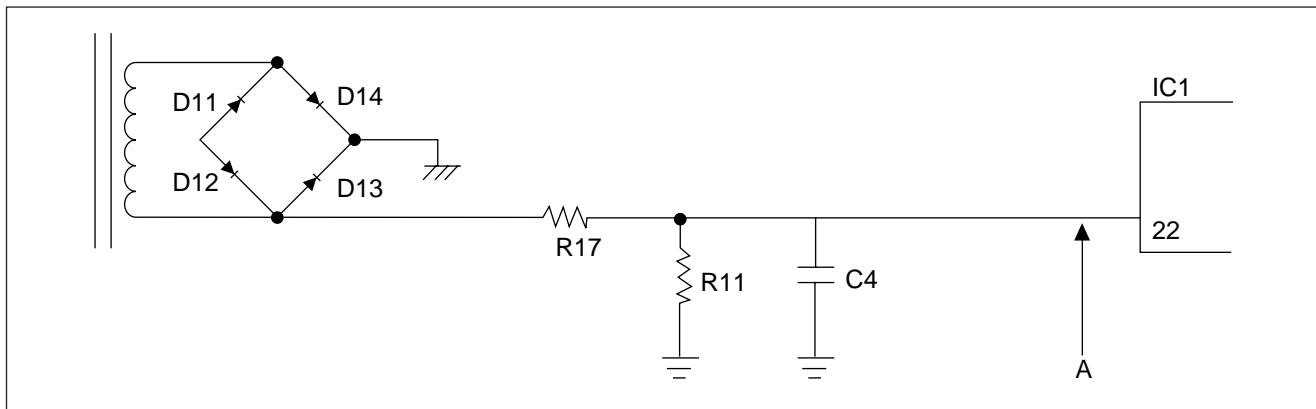


CHECK METHOD

STAGE \ POINT	A	B
1) DOOR OPENED	OPEN	-5VDC
2) DOOR CLOSED	CLOSE	GND

CHECK NO.	METHOD	REMEDY
1	Check the stage (ON,OFF) of the secondary Interlock switch by resistance measurement.	Replace secondary interlock switch.

6) When the digital clock does not operate properly.

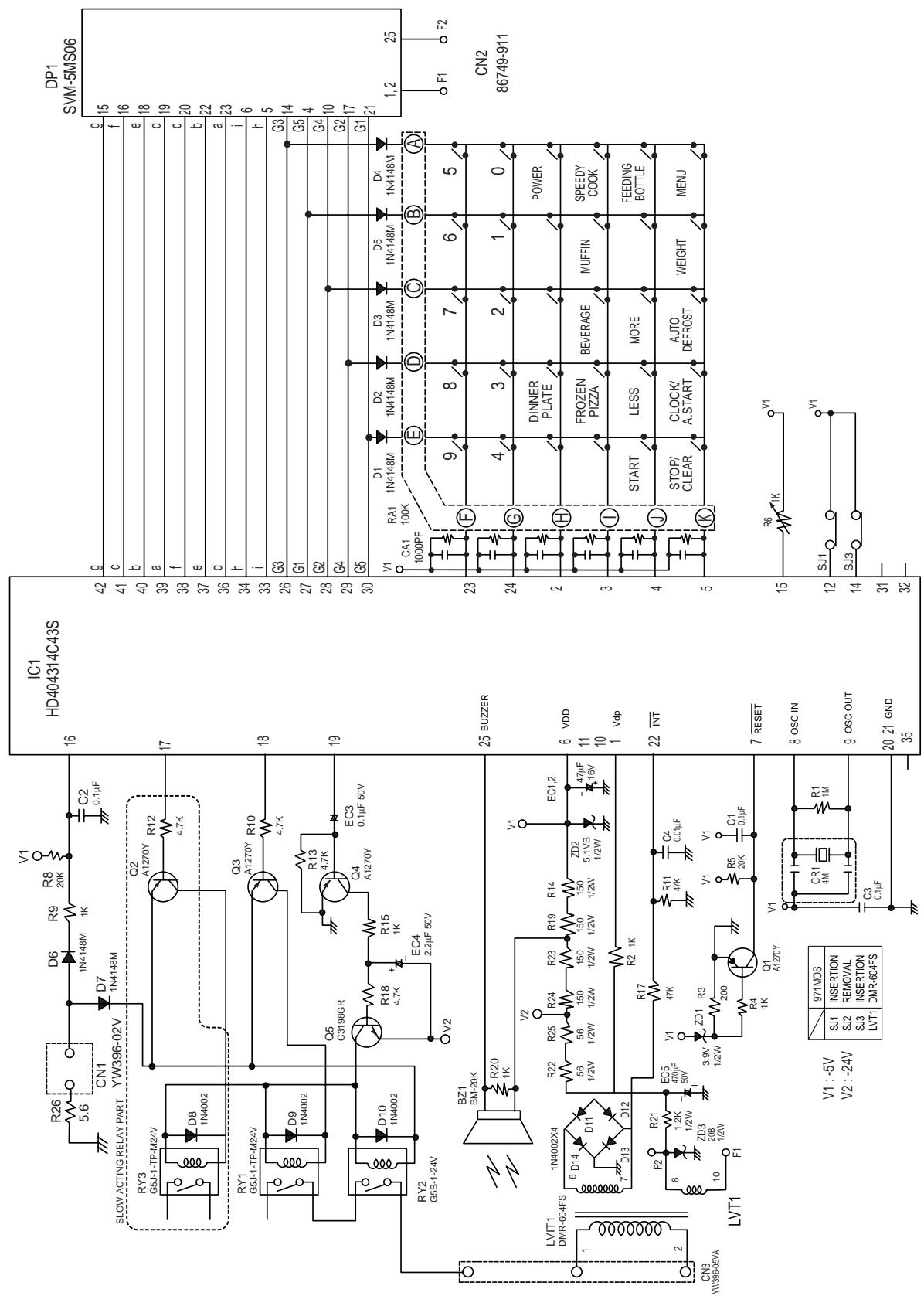


POINT	WAVEFORM
A	A sine wave waveform diagram. The vertical axis has markers for 0V and -14V. The horizontal axis is labeled T; 16.67ms. The waveform is a sine wave oscillating between 0V and approximately -14V.

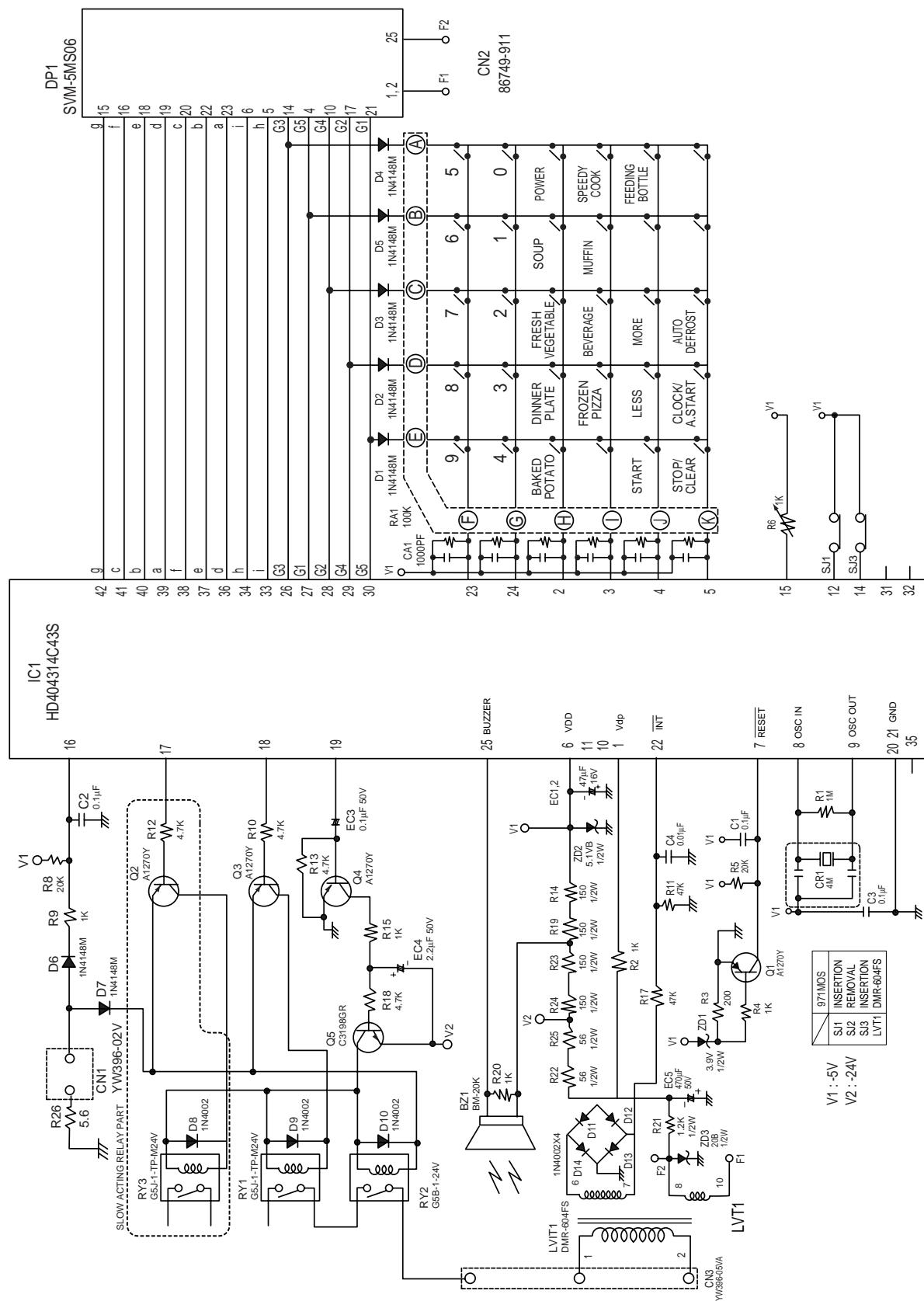
If clock does not keep exact time, you must check resistor R11, R17.

P.C.B CIRCUIT DIAGRAM

KOR-971M0A

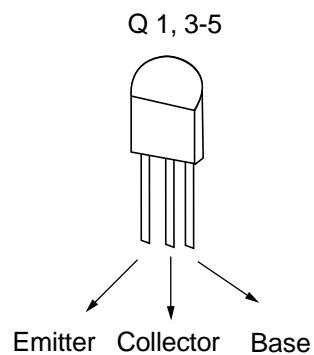


KOR-971Q0A

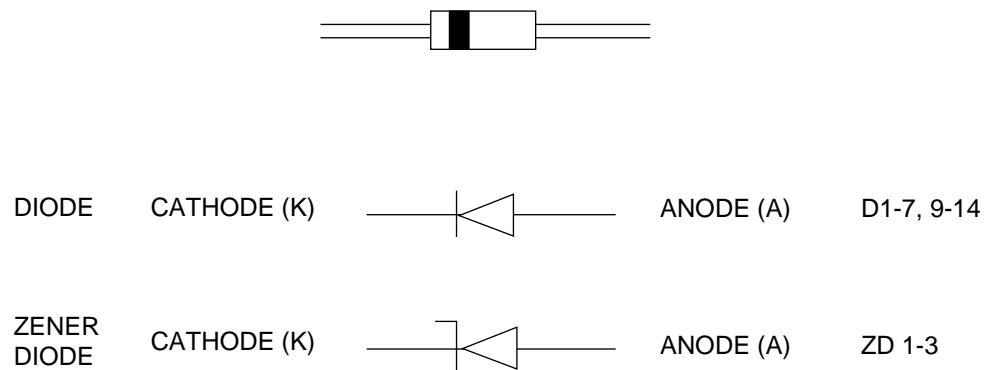


COMPONENT INFORMATION

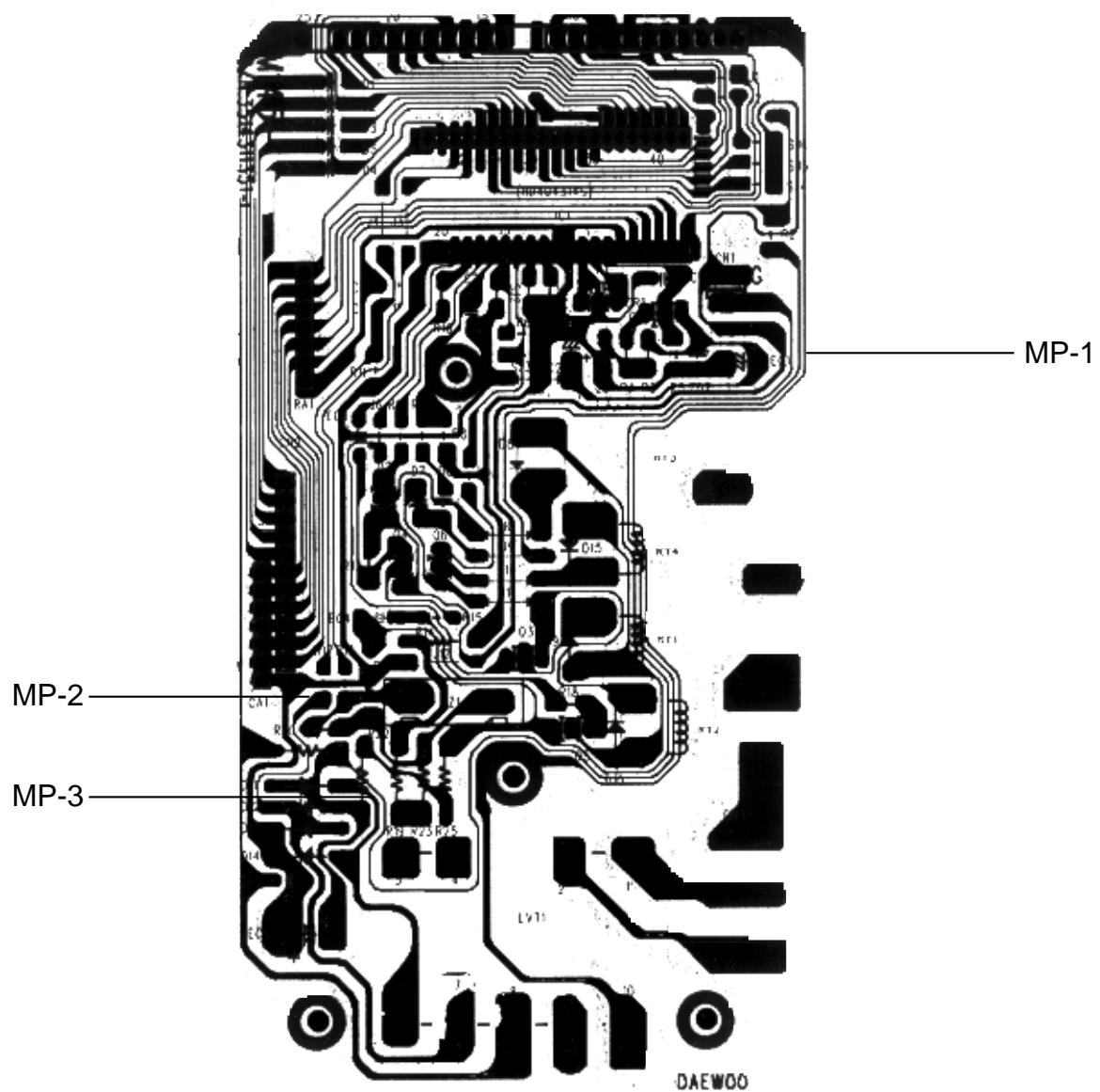
1) Transistor



2) Diode and Zener Diode



4. PRINTED CIRCUITS BOARD



5. P.C.B LOCATION NO.

No	NAME	SYMBOL	SPECIFICATION	PART CODE	QTY
1	RESISTOR	R10, 12, 13, 18	4.7kΩ, 1/6W, 5%	RD-AZ472J-	4
2	RESISTOR	R3	200Ω, 1/6W, 5%	RD-AZ201J-	1
3	RESISTOR	R5, 8	20kΩ, 1/6W, 5%	RD-AZ203J-	2
4	RESISTOR	R1	1MΩ, 1/6W, 5%	RD-AZ105J-	1
5	RESISTOR	R2, 4, 6, 9, 15, 20	1kΩ, 1/6W, 5%	RD-AZ102J-	6
6	RESISTOR	R11, 17	47kΩ, 1/6W, 5%	RD-AZ473J-	2
7	RESISTOR	R24	51Ω, 1/4W, 5%	RD-4Z510J-	1
8	RESISTOR	R22, 25	56Ω, 1/2W, 5%	RD-2Z560JS	2
9	RESISTOR	R14, 19, 23	200Ω, 1/2W, 5%	RD-2Z201JS	3
10	RESISTOR	R21	1.2kΩ, 1/2W, 5%	RD-2Z122JS	1
11	DIODE SWITCHING	D1-10	1N4148M	DZN4148M--	10
12	DIODE RECTIFYING	D11-14	1N4002A	DZN4002A--	4
13	DIODE ZENER	ZD1	3.9VB, 1/2W	DZTZ3R9B--	1
14	DIODE ZENER	ZD2	5.1VB, 1/2W	DZTZ5R1B--	1
15	DIODE ZENER	ZD3	20VB, 1/2W	DZTZ20B---	1
16	TRANSISTOR	Q5	KTC3198GR	TZTC3198GR	1
17	TRANSISTOR	Q1, 2, 3, 4	KTA1270Y	TZTA1270Y-	4
18	RESISTOR ARRAY	RA1	RGLD6X104J	RA-87X104J	1
19	CAPACITOR CERAMIC	C4	HIKF 50V 0.01µF Z	CCXF1H103Z	1
20	CAPACITOR CERAMIC	C1-3	HIKF 50V 0.1µF Z	CBXF1H104Z	3
21	CAPACITOR ELECTROLYTIC	EC5	220µF, 50V, RSS	CEXF1H221V	1
22	CAPACITOR ELECTROLYTIC	EC1-2	47µF, 16V, RS	CEXF1C470A	2
23	CAPACITOR ELECTROLYTIC	EC3	0.1µF, 50V, RS	CEXF1H108A	1
24	CAPACITOR ELECTROLYTIC	EC4	2.2µF, 50V, RS	CEXF1H229A	1
25	CAPACITOR ARRAY	CA1	1000pF, 2.54MM, M50V	CN6XB-102M	1
26	BUZZER	BZ1	BM-20K	3515600100	1
27	RESONATOR	CR1	KBR-4.0MKSTF	5PKBR40MKS	1
28	CONNECTOR FILM	CN2	FCZ 254-11	441M367160	1
29	CONNECTOR WAFER	CN3	YW396-05VA	3519150510	1
30	CONNECTOR WAFER	CN1	YW396-02V	3519150520	1
31	DIGITRON	DP1	SVM-5MS06	DSVM5MS06-	1
32	HOLDER VFD	DPH	NYLON66	3513000500	1
33	PCB MAIN	M145-1	M145-1	3514311351	1
34	TRANS POWER	LVT1	DMR-604P	5EPU041403	1
35	RELAY	RY1, RY3	G5J-1-TP-M24V	5SC0101107	1
36	RELAY	RY2	G5B-1 (DC24V)	5SC0101109	1
37	IC MICOM	IC1	HD404314C43S	147S145M3B	1